SPECIAL EDITION

THEN

AND NOW

PEARL HARBOR

Number 38

AFTER THE BATTLE

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Front Cover: The south-east corner of the Naval Air Station, Ford Island, which lies in the centre of Pearl Harbor, early on the morning of Sunday, December 7, 1941, with the same view taken in July 1982. The oily fireball is most probably from the destroyer USS *Shaw* which was hit by three bombs at 8.50 a.m. causing the forward magazine to explode (National Archives).

Centre spread: Pearl Harbor today looking south.

Back cover: Unidentified serviceman's grave at the National Memorial Cemetery of the Pacific in Punchbowl Crater, Honolulu.

Acknowledgments:
Of the many publications consulted for the preparation of this issue, readers interested in further study of the 'after the battle' side of the story are especially recommended to consult *PEARL HARBOR: Why, How, Fleet Salvage and Final Appraisal* by Vice Admiral Homer N. Wallin published by the US Naval History Division, Washington, in 1968.

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HAWAII —

its discovery and development

Lying over 2,000 miles west of the Pacific seaboard of the United States, the Hawaiian islands form part of a 1,500-mile archipelago comprising more than a hundred islands and islets. The eight major islands — Niihau, Kauai, Oahu (location of the capital of Honolulu), Molokai, Lanai, Kahoolawe, Maui and Hawaii, which are basically the tops of submerged volcanic mountains, lie at the eastern end of the chain.

Originally the Hawaiian Islands were untouched, pure and completely uncontaminated by outside civilisation. Each island was self-governing, strictly ruled by a system of 'kapus' or 'taboos' which governed everyday life and laid down guidelines for the behaviour and activities of each member of society. Despite some cruel customs, such as human sacrifices to the gods, everyone knew more or less where he stood and lived a well-ordered and contented life.

This well-structured civilisation continued to thrive and prosper in comparative tranquility, despite the wars which Hawaiians indulged in more for fun than anything else, until the inevitable interruption of Western civilisation. This was destined first to shake, then throw into disorder and finally annihilate everything Hawaiian.

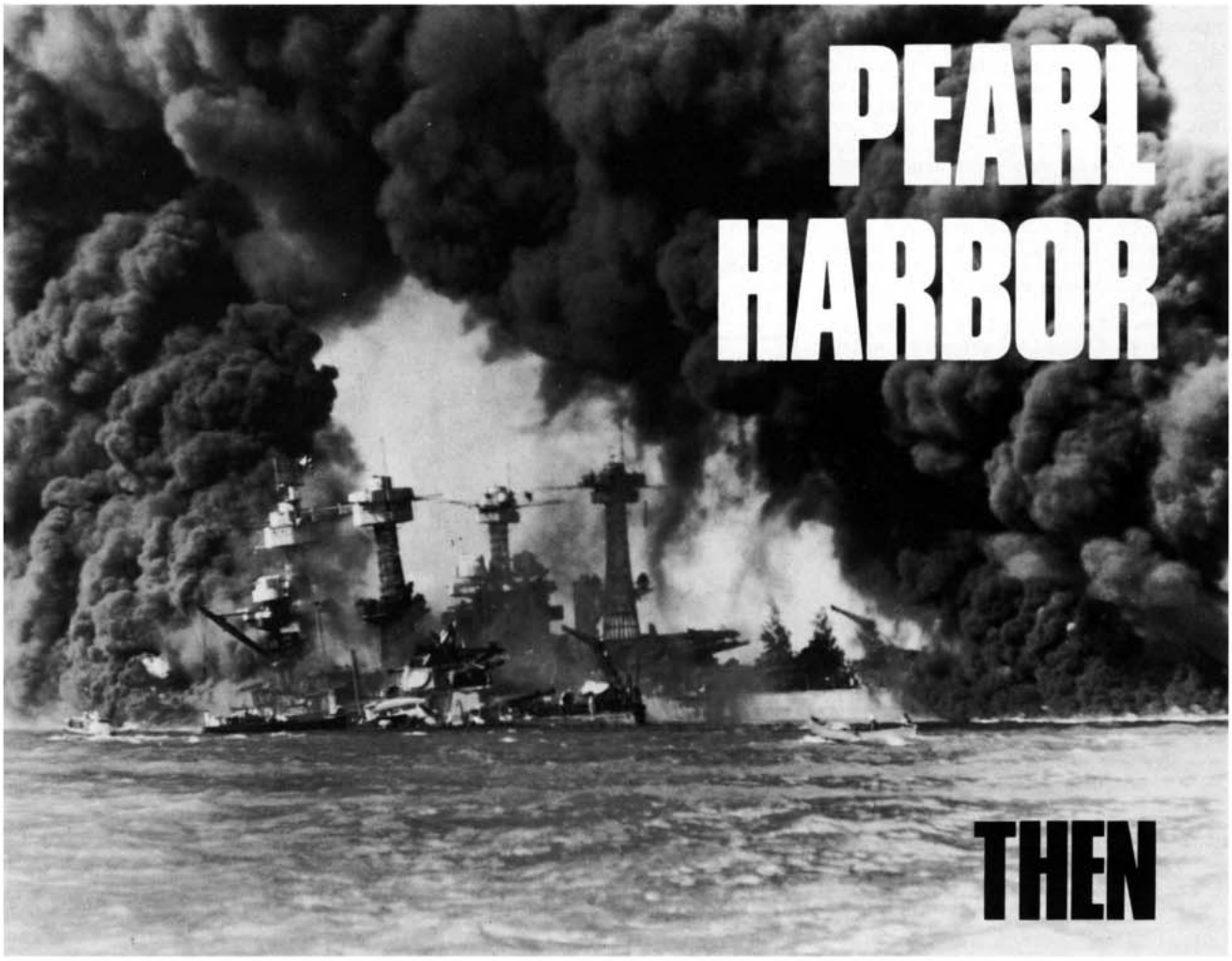
In 1778, Captain James Cook, one of Britain's greatest explorers, sailing in HMS *Discovery*, was on a voyage searching for a north-west passage from Asia to Europe when a strange and uncharted land mass came into view. Filled with anticipation, Cook sailed towards the land and laid anchor at Waimea, on Kauai, on January 20 to become the first white man to set eyes on this beautiful and serene land. News of his visit spread like wildfire throughout the islands and by November when Cook returned, native canoes followed his ships as they sailed along. A huge flotilla accompanied the vessels until Cook decided at last to drop anchor at Kealakekua Bay, Hawaii Island, on January 17, 1779.

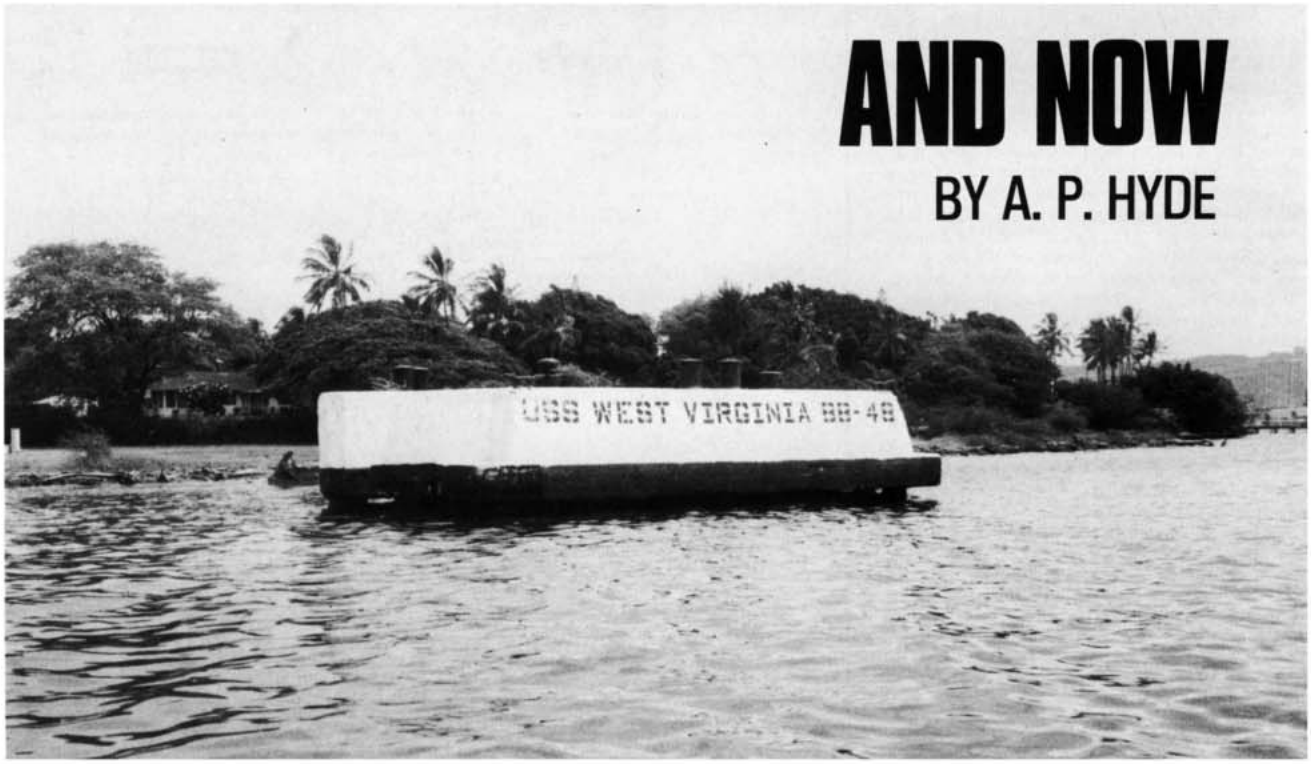
He soon discovered one of the reasons why he was being welcomed with such open and sincere friendship and adulation. He had by chance turned up during the sacred festival of Lono, in which Cook was seen as the god himself returning to his people. Completely overwhelmed by this attention, the captain and his men feasted and engaged the attention of the natives, totally enjoying themselves — especially his men who were more than willing to indulge in the legendary charms of the Polynesian native women.

Captain James Cook, 1728-1779.

However loath Cook might have been to go, he still had a lot of work to get done and finally his ships set off once more on February 2, running almost at once into a fierce storm. It severely damaged his vessels and sent them limping back into Kealakekua Bay. This time, though, he found himself confronted by a much different attitude. The festival of Lono was now over and the bay 'kapu' — no-one was allowed on it for fear of angering the gods. A few natives were left but they were too scared of defiling their kapu to treat Cook as they had before. They were also sceptical about the fact that a so-called god could have his possessions damaged so easily. Friction began to grow, with the natives stealing bits and pieces from the sailors when they could and then running back to the safety of the jungle. The final straw came when they made off with a cutter on February 13. By then Cook had had enough, and he went ashore with nine marines to retrieve it. A nasty row resulted when he demanded of the local King that he return the boat at once. Both sides argued and several warriors attacked the party with clubs and stones. Cook saw things getting very nasty and ordered his men to withdraw before the angry mob milling around decided to have their heads. As they made good their escape, the crowd became more incensed as they saw Cook no longer as a god but as a defiler of their taboo. Eventually the crowd caught up with them, surrounded the Englishmen and clubbed and battered all but five of them to death, Cook being among those killed.

February 14, 1779, and Captain Cook is struck down on Kealakekua beach on the western coast of Hawaii. A white obelisk marks the spot today.





Top: **The USS West Virginia keels over after being hit by at least seven torpedoes on December 7, 1941. The Tennessee moored behind her only suffered two bomb hits and was repaired ready for action by December 20. The smoke is from burning oil escaping from the Arizona, out of the picture to the right (National Archives).** *Above:* **The position where each battleship was lying when attacked is indicated today by their names and pennant numbers painted on their original mooring jetties.**

Learning what had happened, the ships opened up on the island in a surge of anger and the crews made forays ashore in which they shot and charged at the villagers. The orgy of killing went on until the seamen pulled out on February 22, taking with them what was left of their captain — a charred and mutilated heap which could only be identified by a wound on his finger which unmistakably belonged to Cook. Hawaii's entry to the modern world had thus begun in a brutal and vicious confrontation. What should have been a happy and friendly meeting of two minds turned out to be a bloody clash which was to reduce the Hawaiian people to a broken and miserable group.

No other white men ventured into Hawaiian waters until 1786 and when they did it was to the place which many years later was to be become known as Pearl Harbor. The natives and the pearl fishermen who searched it for oysters called it Wai Momi, quite simply 'water of the pearl', and the Englishmen who sailed into it on board HMS *King George* and HMS *Queen Charlotte* were impressed by its beauty. The captain, Nathaniel Portlock, sent a party ashore on June 3 and returned with stories which confirmed its perfection.

They were followed over the next few years by more Royal Navy ships and in 1792 HMS *Discovery* returned, this time commanded by George Vancouver. Word spread of this invaluable anchorage and two years later another vessel, the *Lady Washington*, commanded by John Kendrick, landed there. All the time the pearl fishermen continued diving undisturbed and the site remained more or less unspoilt. In 1818 another Englishman arrived and his account, published in the *London Literary Gazette* of 1821, spoke of 'many divers employed here diving for pearl oysters which are found in great plenty'.

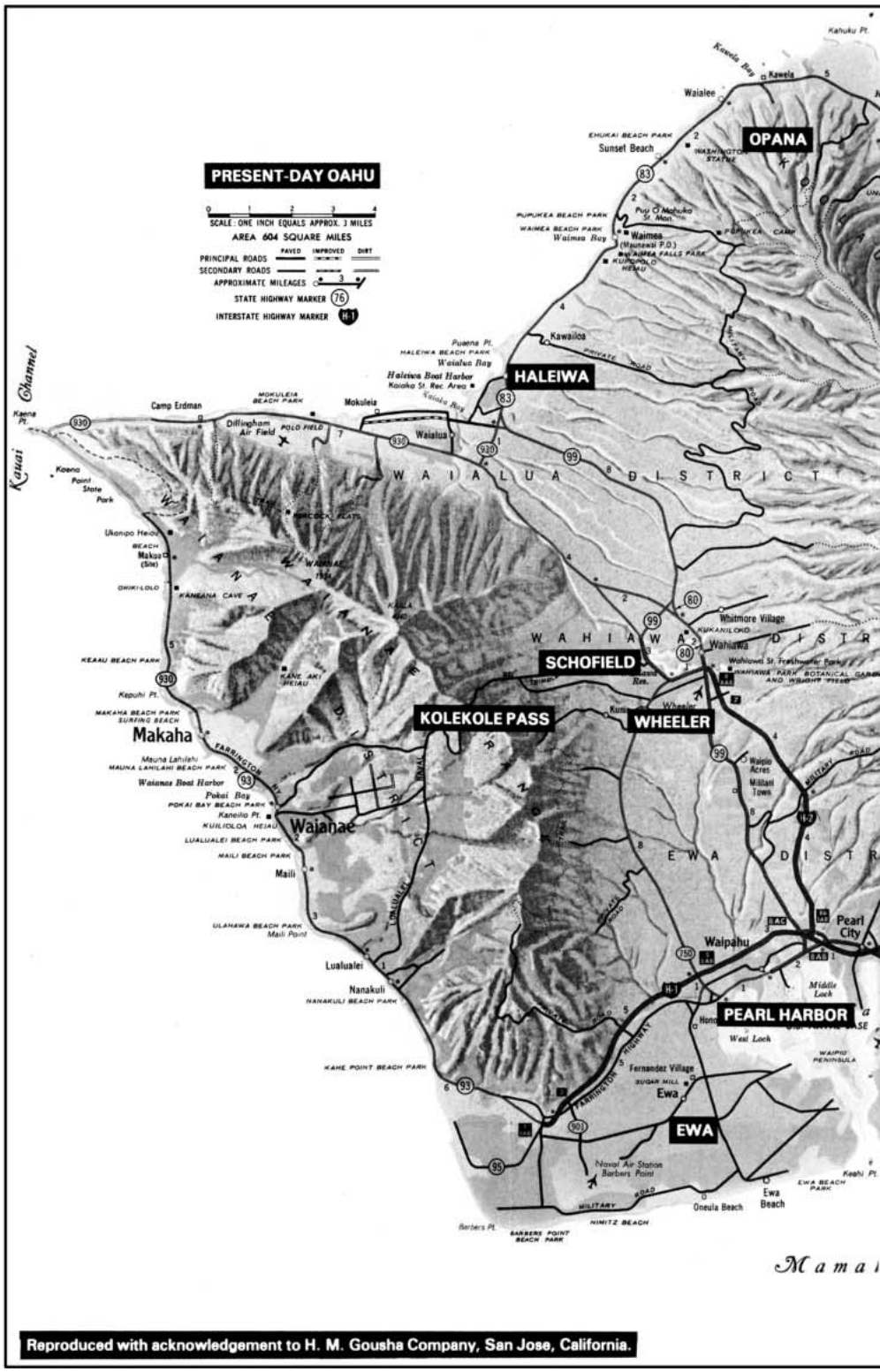
However, interest in the simpler aspects of Pearl River as it was then known were destined not to last, and in 1825 a naturalist, Andrew Bloxham, arrived on board HMS *Blonde*. His interest lay in a naval base, and he stated in his report that ' . . . it would form a most excellent harbour as inside there is plenty of water to float the largest ship and room enough for the whole Navy of England'.

The Hawaiian Islands could easily have been subdued by Britain had policy at that time dictated conquest, but, in the event, it was the United States which was growing more interested in the possibilities offered by Hawaii and in 1840 Commander Charles Wilkes, USN, sailed into the scene. He was with the US Exploring Expedition and had been journeying through the Orient and along the Pacific coast of America on behalf of the United States Government. Whilst resting and stocking up with supplies in the harbour, the then-Hawaiian King Kamehemeha III asked if Wilkes could make a proper survey of the harbour. He obliged and thus provided the first technical work by the United States Navy of the harbour.

Nevertheless, although American influence was growing, many Englishmen still coveted the islands, and in 1843 Captain Lord George Paulet, commanding HMS *Carysfort*, seized the fort at Honolulu, played 'God Save The Queen', and forcibly ceded the islands to his Queen and Country. But the British Government could see no possible advantage in possessing Hawaii and hastily handed it back with humble apologies. This was backed up by Britain joining the United States and France in an agreement guaranteeing Hawaiian independence and recognising it as a sovereign nation.

From then on the Americans took on a bigger and more responsible role in serving as advisers to the King and later to his fledgling government. American interest in the harbour must have been made clear. The Hawaiian King began to see that perhaps he could trade in some way rights to Pearl Harbor in return for a trade agreement with the United States. In 1873, American interests were confirmed when two United States Generals, Major General John M. Schofield and Brigadier General Burton S. Alexander, visited the islands. Their job was to weigh up the islands' potential as a major base, and Pearl Harbor — still then known as Pearl River Lagoon — was one of the places they examined most closely. In 1876 Hawaii got its trade treaty with the United States, and in 1887 the United States Navy was granted rights to establish a coaling station in Pearl Harbor.

On the surface relations between the two countries seemed assured but underneath the by now large resident American population was seething with discontent. They comprised mainly planters — wealthy ones at that — and the growers of the Kingdom's valuable crops of sugar and pineapple. Seeing themselves as the major contributors to her economy, they were angered when they saw themselves taxed so the Hawaiian King could spend a fortune on a luxurious lifestyle, building the Iolani Palace for a Royal residence with their money. In the same year that the United States received rights to Pearl Harbor the 'haole' community rebelled. The King was removed from power and transformed into a figurehead and an elected government — so constituted that only the wealthy whites could vote for it — was established. This effectively did away



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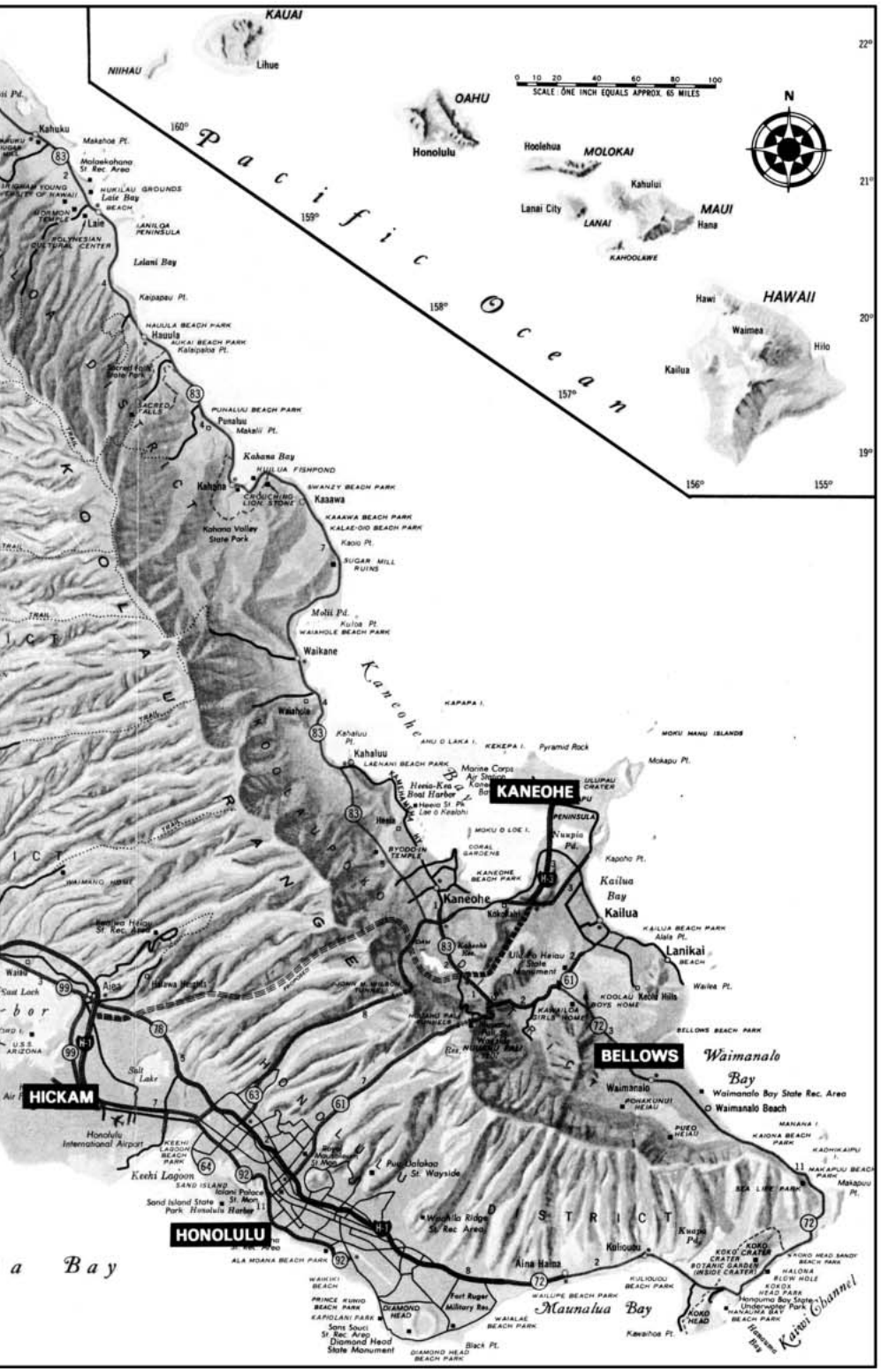
with an independent Hawaii, leaving King Kalakaua a powerless symbol. In name only was Hawaii still a Kingdom and when he died in 1891 his Kingdom virtually died with him.

His heiress, Princess Liliuokalani, became Hawaii's first reigning Queen and also her last Monarch. She caused upheaval by threatening to return to the old ways and become the one true governing power once again. She wanted to do away with the new Constitution and get rid of the interfering foreigners who had taken away by force the people's leader.

The American 'Cabinet Government' saw an end to their hopes of eventual federation with the United States and so, on January 16, 1893, in order to pre-empt any action she might take, almost 114 years to the day after being discovered by Cook, a revolt by the white businessmen usurped the Queen and, after much argument with a disapproving United States Government, declared a Republic of Hawaii.

At last, old Hawaii was gone, swept away, coming now under the complete control of a group of wealthy businessmen. A counter-revolution by loyal pro-Royalist Hawaiians was defeated before it even got off the ground and Queen Liliuokalani who instigated it was put under arrest. By now, the attitude of the United States had changed. Americans were fighting a war against Spain to wrest the last vestiges of Empire from her — Cuba and the Philippines — and Hawaii was seen as a vital base for operations. Rather than abhoring the seizure of the islands, the Government was now making noises in their direction themselves. They knew the businessmen there wanted federation — merely to improve the markets for their products — and the Republic of Hawaii officially offered itself to the United States in 1898. The United States dutifully accepted.



Now Hawaii was a United States possession, the military could set about exploiting the harbour in a way that they could never have done under the constraints of it belonging to an independent country. Survey work was begun by parties landed by USS *Philadelphia* and USS *Bennington* and in 1900, with an allocation of £100,000, dredging began.

The first United States ship to enter the new harbour was the gunboat *Petrel* which laid anchor on January 11, 1905. There was yet more dredging in 1908 until the channel was cleared to a width of six hundred feet with a minimum depth of thirty-five feet. Palm trees, sandy beaches and the oysters were now gone, as were the once-happy divers. The official opening of Pearl Harbor was celebrated on December 14, 1911, exactly thirty years bar one week before it was to be rocked by the Japanese attack.

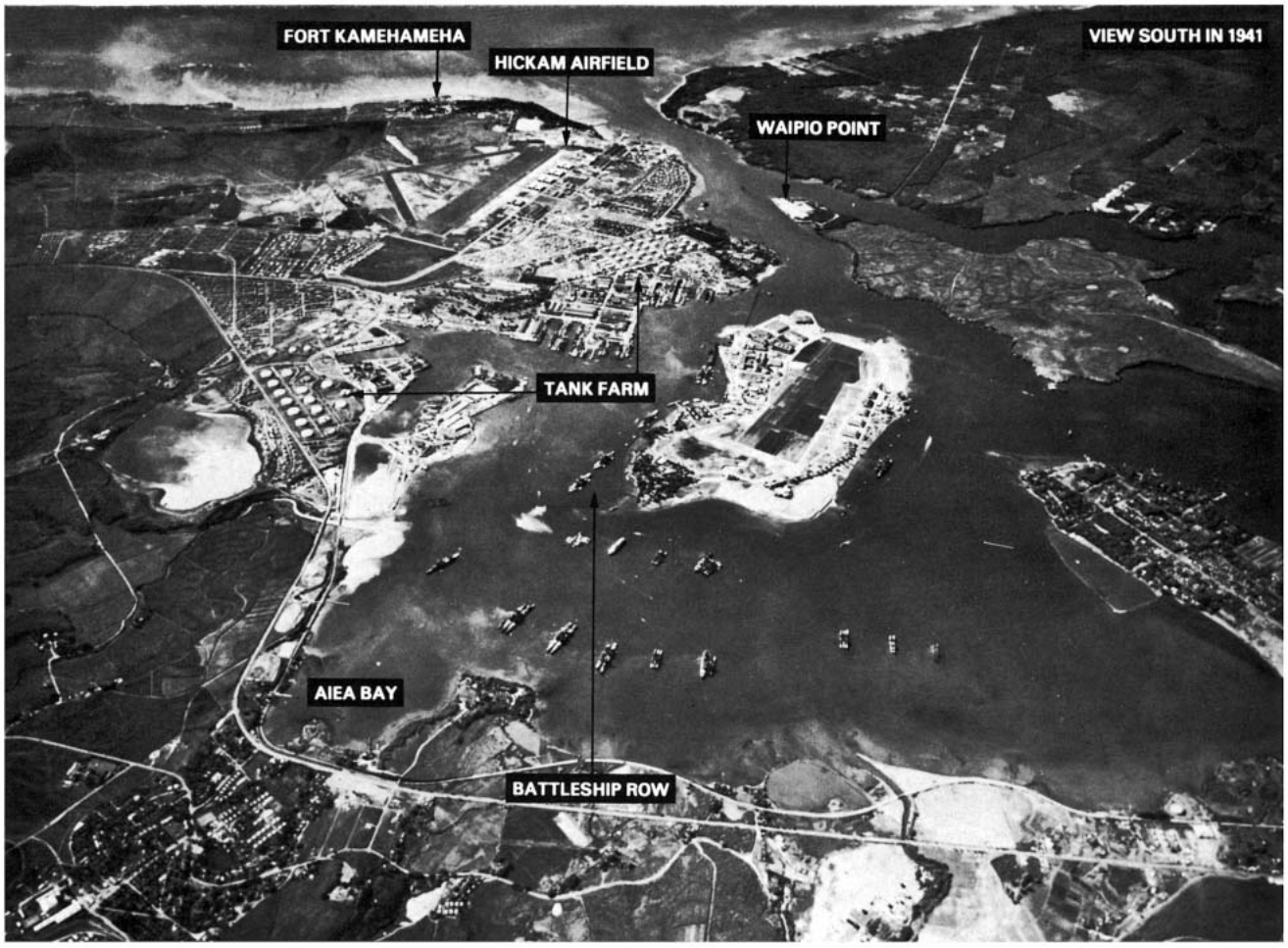
In the middle of the harbour stood an island originally called Moku Umeume or 'Island of Strife'. It was first owned by Don F. Francisco de Paula Y Marin — King Kamehemeha I's Spanish interpreter. Its name was changed in 1825 by a British survey project to Rabbit Island. It was then bought for £1,040 in 1865 by James L. Dowsett who then sold it to a Miss Caroline Jackson for one dollar. Its present name of Ford Island came from a Boston physician, Seth Porter Ford, whom she married in 1866. The island was not militarised until World War I when the Army's Sixth Aero Company moved in, and was not used by the Navy until 1923. Two air stations existed there then, Luke Field on the Pearl City side and the Naval Air Station on the other side but when the Army moved to Hickam in 1939, Luke Field was abandoned.

JAPAN'S RISE TO POWER

When, in the mid-nineteenth century, Japan gradually began to shed its feudal past, it entered a period of expansionism which led, inexorably and inevitably, to the events of December 7, 1941.

She began by reforming the two main tools of aggression, the Army and the Navy. Once her Samurai-like armed forces began to see the possibilities offered by expansion, friction began to grow between herself and her neighbours. China, who coveted more or less the same territories as Japan, openly expressed her desires towards Korea. When Japan made it known that she also had plans for the country, war broke out between the two countries on July 27, 1894. China's archaic armies were no match for those of Japan, newly trained on the same lines as the Europeans, and she was forced to sue for peace and concede a free hand in Korea to her enemy. In addition, the Treaty of Shimonoseki resulted in Japan receiving Formosa, the Pescadores and the Liaotung Peninsula.

Japanese expansionism remained unquenched, especially as having no natural resources of her own, she was forced to look outside for them if she was to develop into a power equal to those of Europe. Her need to be accepted as an equal was to some degree satisfied by the Anglo-Japanese Treaty of 1902 but relations with Czarist Russia were far from cordial. Competition over Manchuria and Korea caused extremely bad feelings between the two and negotiations finally broke down when the Japanese Admiral Togo sent torpedo boats into Port Arthur to destroy the



Russian Fleet anchored there. This took place on February 8, 1904, without any formal declaration of war or intent and the first the Russians knew about being at war was when the Japanese started sinking their ships!

Admiral Togo's domination of the sea prompted Czar Nicholas II to dispatch his Baltic Fleet to the Far East late in 1904. Forty-five Russian vessels, including seven battleships and six cruisers, sailed through the East China Sea to enter the waters between Korea and Japan on May 27, 1905. Here, in the Tsushima Strait leading to the Sea of Japan, Togo intercepted the ships with a fleet of comparable size. His ships, superior in every respect, decimated the Russians within half-an-hour. They sank one battleship, crippled another and scattered the demoralised Russian Fleet. Before nightfall, Togo had sunk three more battleships and pursued the crippled fleet to Vladivostock. Togo sank three more Russian ships during the night and all but twelve of the remaining enemy vessels the next day. This humiliating defeat gave the Russians no alternative but to seek peace. American President Theodore Roosevelt acted as go-between and negotiated yet another step forwards for Japan.

Her expansionist policies grew with every year that passed and she saw yet another chance to add to her conquests when the First World War erupted. She declared war on the German Empire in August 1914 and at once set about seizing her possessions in the Far East. Her main objective was the port city of Tsingtao on the Shantung Peninsula of China which had been in German hands since 1898. On September 18, 1914, 23,000 Japanese troops landed above the city and were joined by 1,500 British five days later. The city, defended by 4,000 German Marines, was captured by November 8. Meanwhile German and Japanese troops faced one another in Germany's possessions in the rest of the Pacific consisting of the Marshalls, Ladrones, Pelews, and Carolines. Japan had little trouble wrenching these isolated pockets from Germany, and they were later mandated to her by the Allies.

And so, Japan got the South Pacific bases which were so important to her in her conquests of 1941-42; Japan had cleverly taken what she wanted out of the havoc of the European war but thereafter did nothing to aid the Allies for the rest of the conflict.

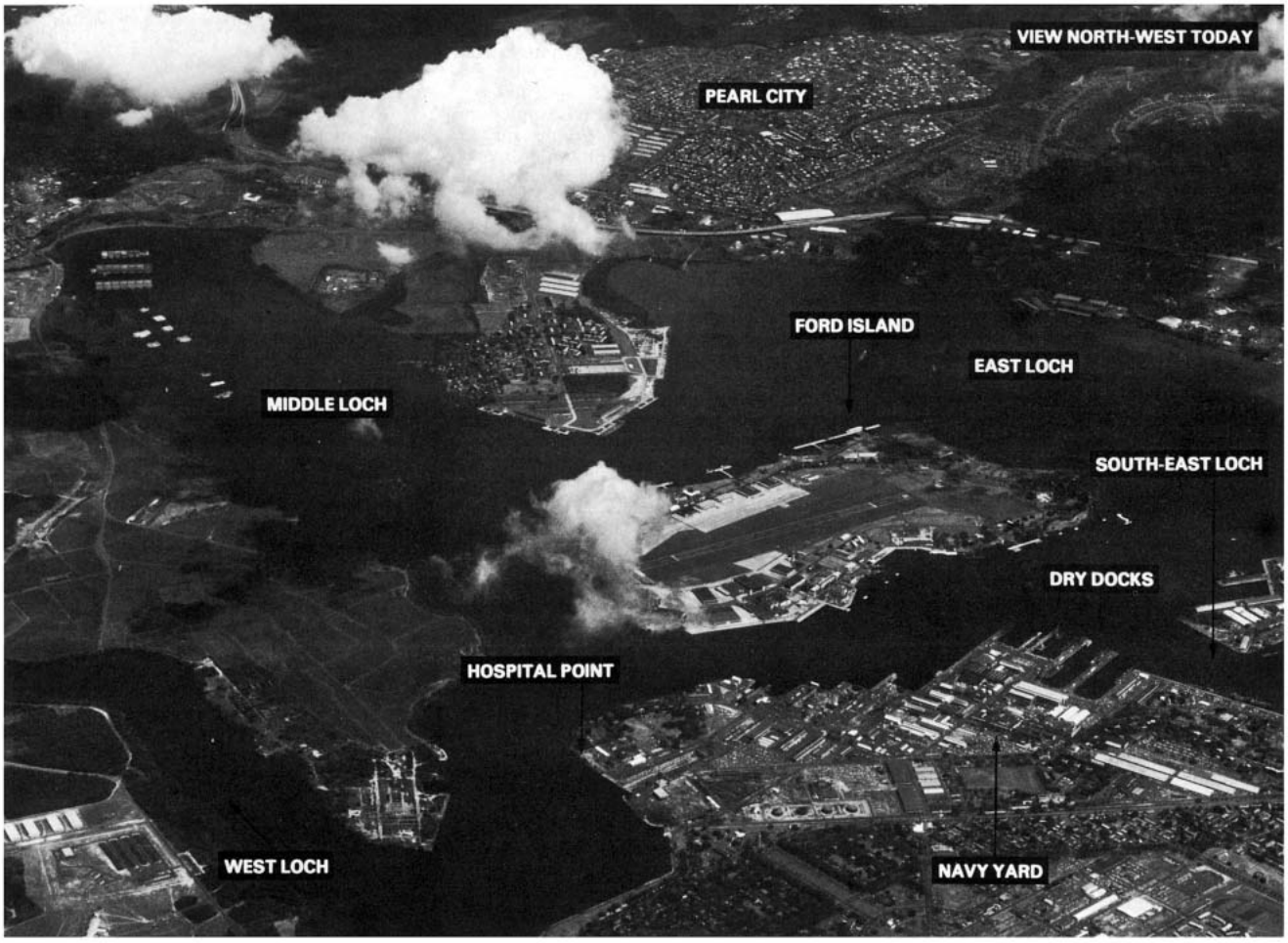
One thing which caused deep resentment and long-lasting antipathy in Japan following the First World War was the refusal of the Western Powers to accept her as a racially equal country. In fact, Japan wanted a clause in the Paris Conference which would recognise this, but other countries — notably Britain — refused to accept it. This was especially insulting to her as Japan felt that, if anything, she was the superior nation, and the Europeans corrupt and inferior. She saw every move the Western Powers made as an attempt to keep her in check, with the Pacific Islands mandated to her only to keep her quiet.

Her frustration was added to when in 1922 the Washington Naval Conference was held with the express intention of holding her back still more. The United States delegation proposed a ratio of three ships for Japan for every five the Americans and British would maintain. Although this meant that the size of the latter's navies would be restricted, it still prevented the Japanese from ever catching up. Consequently, Japanese naval power would be stemmed and her ability to operate on an equal basis perpetually held back. The conference also agreed to maintain the status quo as regards forts and naval bases in the Pacific. This suited Britain and the United States because it saved them from having to spend any more money on installations while safe in the knowledge that Japan had never really made a start so could not be in a position to threaten them in that respect. The intention was clearly to prevent Japan from ever building herself up enough to pose a threat, at least not if she stood by the decision of the conference. Japan was furious at the affront to her prestige but there was very little she could do about it at that time. She was still the junior in the Pacific, and was in no position to risk angering her bigger neighbours there — at least not yet.

The United States was becoming increasingly aware, as was Britain, of Japan's emergence as a force to be reckoned with in the Far East, and of her potential as a competitor to the Great Powers in that sphere. In fact, Japanese expansion was proving a direct threat to the US already, isolating the Philippines with a ring of possessions, each a possible threat to her security. From the Japanese side it seemed that everyone was against her, determined to keep her 'in her place' and frustrate her ambitions. A further blow to her pride came in 1924 when the US completely barred all Japanese immigration.

For years the Japanese warlords contemplated their position, awaiting the moment to burst forth and display to the world their greatness. Their opportunity came at last in 1931 when the Japanese Army invaded Manchuria and set up a puppet Government, calling the country Manchukuo. They then proceeded to embark on campaigns designed to consolidate their conquest and invest the country.

The United States at once protested about this outright aggression and reminded Japan of her obligations under the Briand-Kellogg Pact and the Nine Power Treaty of 1922. The US Government went on to say that she would not recognise anything that meant negating the rights of Chinese citizens. Japan, however, was not prepared to turn round after achieving so much, and even went so far as to show her contempt for American opinion by



occupying Shanghai for several months in 1932.

A peace proposal was put forward by Great Britain, France, Italy and the United States, but it gave Japan nothing she could not snatch through war, and she sent back a swift and uncompromising refusal. Meanwhile the nation's propaganda machine began to work at full stretch, expounding the might and divine destiny intended for them, whilst at the same time showing the Western Powers to be evil and corrupt and determined only to stop Japan fulfilling that destiny. This campaign of words led to greater campaigns on the battlefield, resulting in Japanese troops occupying Jehol in North China.

America's position did not shift one inch and neither did Japan's, so when the League of Nations met in 1933 to discuss what they should do about Japanese actions in China, violent rows broke out. The Japanese delegation walked out and the country gave notice of her intention to resign her membership of the League.

However, seeing a severe rupture of relations with the US a strong possibility, the following year Japan sought to allay American fears and concerns about her intentions towards her by assuring the US Government that she had no warlike desires at all towards America. Despite this, the US insisted that she stop her aggression in China and promise to stand by her agreements regarding trade and commerce between the two countries. Seeing her ability to maintain her war against China menaced, Japan then announced her intention to renege on the 1922 Washington Conference Treaty limiting her naval expansion.

Despite her fears to the contrary, Japan was doing well in China and inflicting severe damage to the enemy and was building up her military strength even more. Following her earlier announcement and, perhaps, feeling she held the ace card, Japan asked for naval parity with Britain and the US at the London Conference of 1935-36. This was duly refused and in her fury she withdrew from the conference and refused to abide by any further arms or naval limitation decisions that might be made.

With relations with the two major powers getting worse and worse, Japan was feeling ever more isolated, and she started to look elsewhere for an ally. Germany was displaying more or less identical visions of supremacy as herself and before long Japan started to send emissaries to the Reich and eventually an Anti-Comintern Pact was signed between the two countries on November 25, 1936.

In the meantime, Japan was becoming increasingly anxious to settle her troubles with China once and for all. In July 1937 she moved into that vast country and occupied Peiping in north China and made ready to seize even more. She pushed aside all protests from the League and the USA who had put forward plans for a peaceful solution. The situation deteriorated further, and almost came to a state of war between the US and Japan, when on December 12, 1937 the US heard of the bombing and destruction of the gunboat *Panay* and three merchant ships on the Yangste River followed by the machine-gunning of the crew and passengers. Japan was quick to offer her abject apologies for the incident and expressed her hopes that 'friendly relations' would not be affected by what had occurred.

America was now beginning to feel that all these empty words would come to no good and, slowly and very reluctantly, began to plan for a possible conflict with her. US interests in the whole area were too important to allow Japan to continue to threaten them without some sort of retaliation. American security in the Pacific had been of paramount importance and concern ever since the US first established herself in the area following the Spanish-American War and the acquisition of Hawaii. As early as 1903, instructions had been issued to US officials in the islands to keep an eye on Japanese citizens there who might pose a security threat and educated Japanese, teachers, doctors, businessmen and so forth were kept under strict surveillance. These measures were not without good cause, for Japanese agents had been sent to the islands in 1922-23 as part of their ground work for the 1922 Washington Conference. By 1926, these spies had sent numerous reports on US military preparedness in the islands, though it was to be another ten years before they were of any critical value.

Following the decision by President Hoover to base a large part of the US Fleet in Hawaiian waters because of the China conflict, covert activity saw a substantial increase. No doubt mindful that any action she might take that could in any way pose a threat to the US could bring them into direct confrontation, she wanted obviously as much intelligence on her foe as she could muster. In order to allay US fears though, she maintained her outward posture of goodwill in the hope of wooing her big neighbour into a false sense of security. Nonetheless, it was obvious to America that Japan coveted nearly everything there was in the East Indies and the Pacific and, as she had interests in practically every corner herself, she could see that a collision of the two powers was inevitable. War games played in 1933 even took into consideration an attack on Hawaii by Japan, and the results suggested that, in the event of such an attack, the enemy would not be wholly unsuccessful. There were many reasons for America to begin positive action to safeguard her interests, but in this she was in somewhat of a dilemma.

The horrors of the First War produced in the American people a deep feeling of

Admiral Isoroku Yamamoto — architect of the 'Hawaii Operation' — a surprise attack on America's Pacific naval base at Pearl Harbor on Oahu island.

isolationism and loathing of foreign wars which took her young men and butchered them. The Government, despite its fears for both Europe and the Pacific, was more or less shackled by public opinion at home with the fear of losing votes by ignoring such beliefs. A speech made by President Roosevelt on October 5, 1937, which suggested his intention to place sanctions on Japan, was met with wild opposition and large-scale protests and, in the face of such anger, he was forced to retreat. No doubt the domestic goings-on in the US encouraged Japan, and she must have felt that there was little chance of her supplies of oil and war-making materials being cut off — at least not just yet. She could not be other than encouraged by the evident belief of many Americans, many of them in positions of influence and power, that Japan bore America herself no ill will.

This sort of thinking went right through most avenues of Government, not least those which should have been providing a far more realistic idea of Japan's intentions — her security services responsible for monitoring and intercepting Japanese coded messages between Tokyo and her consulates and embassies overseas. These messages, labelled 'Magics', were supposed to supply the highest officials with a very good idea of what the politicians had in mind. The trouble was that the Americans, flushed by their ability to read the Japanese mind in this way, came to believe that they alone held the key to what Japanese intentions were. If the intercepts showed no indication of Japanese ill-will, then they came more and more to assume that there was none.

Japanese diplomatic efforts — those of Ambassador Nomura and other envoys sent by Japan — served only to convince many US government officials that Japan meant no aggression against them and, as the diplomatic intercepts appeared to concur, then they were happy to believe it. This went in tandem with Japan's own hope of getting what she wanted peacefully, and with her showing no sign of her preparedness to go to war if need be.

With every month that passed, however, US attitudes were hardening, and all the indications were that she was going to use her economic power if necessary to stem Japanese imperialism. When war between Britain and Germany broke out she saw US public opinion swing towards the Allies. The United States 1939 Neutrality Act leant in Britain's favour, and the President himself was firmly behind Churchill after he came to power. Pointed requests were made for Italy to refrain from entering the conflict. When the German armies whipped the European nations and Britain stood alone, the US found herself in something of a quandary. If Great Britain fell, there would be nothing between Germany and themselves. The American people did not want to go to war or do anything that moved them that way, but public opinion had shifted dramatically towards Britain. Meanwhile, Churchill made his request for forty or fifty destroyers, and for aid to be given even after Britain ran out of money — eventually agreed in return for bases.

Japan watched the change of US policy with grave concern, and also saw her own possessions threatened when the US-Japanese Trade Treaty of 1911 expired. Even worse, on April 2, 1940, Japan saw the steaming from West Coast ports of the US Fleet for manoeuvres in Hawaiian waters. This was followed by President Roosevelt's decision that the fleet remain in Hawaiian waters indefinitely.

US-Japanese negotiations were not getting anywhere either, but the interceptions of Japanese coded messages did not point towards an attack. Japanese assurances of goodwill seemed to be confirmed by some decodes, but gave cause for thought in others.

Germany's request for immediate Japanese moves on British and Dutch possessions in the Far East in order to force them into splitting their attentions was met with a firm refusal. Nevertheless, Japan's warlike intentions towards Russia were confirmed and so was her resolve to intensify air operations over China.

The Japanese task force commander was Vice-Admiral Chuichi Nagumo, C-in-C of the First Air Fleet, who had the Akagi as his flagship.

The codebreakers were at least in a position to advise that Japan's next most likely move was north into Russia as deduced by an intercept of March 22.

As Japan was now a full member of the

JAPANESE VESSELS TAKING PART IN OPERATION HAWAII

		Displacement	Launched	Speed	Range	Lost
1st Carrier Division	*Akagi*	26,900	1925	31	8,000	June 4, 1942
	Kaga	26,900	1921	28	10,000	June 4, 1942
2nd Carrier Division	*Soryu*	10,050	1935	34	7,600	June 4, 1942
	Hiryu	10,050	1937	34	7,600	June 5, 1942
5th Carrier Division	*Zuikaku*	29,800	1939	34	9,700	Oct. 25, 1944
	Shokaku	29,800	1939	34	9,700	June 19, 1944
1st Destroyer Squadron	*Abukuma* (Cruiser)	5,170	1923	35	4,000	Oct. 26, 1941
17th Destroyer Division	*Tanikaze*	2,000	1940	35	6,000	June 9, 1944
	Urakaze	2,000	1940	35	6,000	Nov. 21, 1944
	Isokaze	2,000	1939	35	6,000	April 7, 1945
	Hamakaze	2,000	1940	35	6,000	April 7, 1945
18th Destroyer Division	*Kasumi*	1,500	1937	35	5,000	April 7, 1945
	Arare	1,500	1937	35	5,000	July 5, 1942
	Kagero	2,000	1938	35	5,000	May 8, 1943
	Shiranuhi	2,000	1938	35	5,000	Oct. 27, 1944
	Akigumo	1,500		35	6,000	April 11, 1944
3rd Battle Division	*Hiei*	29,330	1912	29.8	9,800	Nov. 13, 1942
	Kirishima	29,330	1913	29.8	9,800	Nov. 15, 1942
8th Cruiser Division	*Tone*	14,000	1937	35.6	8,000	July 28, 1945
	Chikuma	14,000	1938	35.6	8,000	Oct. 25, 1944
2nd Submarine Division	*I-19*	2,180	1939	23	14,000	Nov. 26, 1943
	I-21	2,180	1939	23	14,000	Feb. 5, 1944
	I-23	2,180	1939	23	14,000	Feb. 26, 1942
7th Destroyer Division	*Akebono*	1,700	1930	35	5,000	Nov. 13, 1944
	Usio	1,700	1930	35	5,000	
1st Supply Train	*Kyokuto Maru*	20,000		18	9,000	Sept. 18, 1944
	Kenyo Maru	20,000		18	9,000	Jan. 14, 1944
	Kokuyo Maru	20,000		18	9,000	July 30, 1944
	Shinkoku Maru	20,000		18	9,000	Feb. 17, 1944
	Akebono Maru	20,000		18	9,000	Mar. 30, 1944
2nd Supply Train	*Toho Maru*	8,000		16	7,000	June 15, 1945
	Toei Maru	8,000		16	7,000	Jan. 18, 1943
	Nihon Maru	8,000		16	7,000	

Operations officer Commander Minoru Genda planned the actual tactics to be employed by the carrier force — after the war he became Chief of Staff.

Axis, American concern increased, and despite intercepts to the contrary, Japanese desires towards picking the carcasses of the European powers defeated by Germany became apparent. When France fell in June 1940, Japan asked the French Government at Vichy for rights and military bases in French possessions in Indo-China and she backed her requests with threats and an ultimatum. But even while the Vichy Government was deliberating, the Japanese occupied strategic points and obtained a springboard for offensives against Allied possessions in Malaya and the East Indies. This prompted Roosevelt to bring into force the Export Control Act against Japan by forbidding the export of vital minerals and chemicals, aircraft parts and equipment without a licence. This was law by July 5, 1940, and was followed a few weeks later by halting exports of aviation fuel and particular types of iron and scrap steel.

As a result, Japan was suddenly deprived of her main source of these strategic items and, realising that without a swift change in policy there was little hope of redeeming them, was forced to look for an alternative source of supply. That alternative was of course the East Indies — though she covered her options at the same time by making diplomatic representations to the US on October 8 in order to protest about the American action.

This was bad enough, but Japan also looked with dismay as the US passed a number of Bills intended to drastically strengthen her armed forces, the most notable of these being the Two Ocean Naval Expansion Act. At a cost of £4,000 million, the US planned to build seven battleships, eighteen aircraft carriers, twenty-seven cruisers, 115 destroyers and forty-two submarines. This was in addition to the 130 warships already being built and the 358 main warships then in service.

In charge of the air groups of the First Air Fleet, and who actually flew with the attacking force, was Commander Mitsuo Fuchida.

Not only did the passing of these measures indicate the United States' increasing preparedness to act in the event of Japanese warlike moves, but it meant that once all these warships were built and steaming the seas, Japan could never hope to match their superiority. Thus, every year that went by the Americans would become stronger and the Japanese proportionately weaker. The combination of a military build-up and economic stranglehold would put an end once and for all to Japan's dreams of conquest.

War was now unavoidable as America had given ample evidence of her determination to curtail Japanese expansion. There were many in the Japanese High Command who felt this, and who also believed that the only way success could be guaranteed was to seize the initiative before the United States reached an unassailable position of superiority. At this point, Admiral Isoroku Yamamoto came onto the scene. He had been made Commander-in-Chief Combined Fleet in August 1939 at the age of fifty-five and his first action had been the merging of the First and Second Fleets, with their battleships, cruisers and aircraft carriers, into a single, mighty battle group. Yamamoto knew that any offensive action by Japan that in any way infringed upon the integrity of American interests, i.e. her possessions, would almost certainly bring her into any proposed war. He saw the United States fleet not so much as a threat to the mainland of Japan but as a threat to her southern flank. He therefore deduced that any military action could not be certain of a successful conclusion while a huge US fleet waited on the sidelines. Yamamoto decided that this threat would have to be removed, and that the best way to do so with the greatest possible hope of success was to destroy the enemy before it could destroy them or even get close to doing so. He told Admiral Ryunosuke Kusaka, a close friend: 'If we are ordered to fight the US, we might be able to score a runaway victory and hold our own for six months or a year. But in the second year the Americans will increase their strength and it will be very difficult for us to fight with any prospect of final victory.'

Yamamoto saw the political situation deteriorating and knew that it was only a matter of time before he would be called upon to present to his superiors a plan in the event of war with the US becoming inevitable. Whilst he waited for the curtain to rise, Yamamoto discussed his ideas with Vice-Admiral Shigeru Fukudome during fleet air

AMERICAN VESSELS IN OR AROUND PEARL HARBOR ON DECEMBER 7, 1941

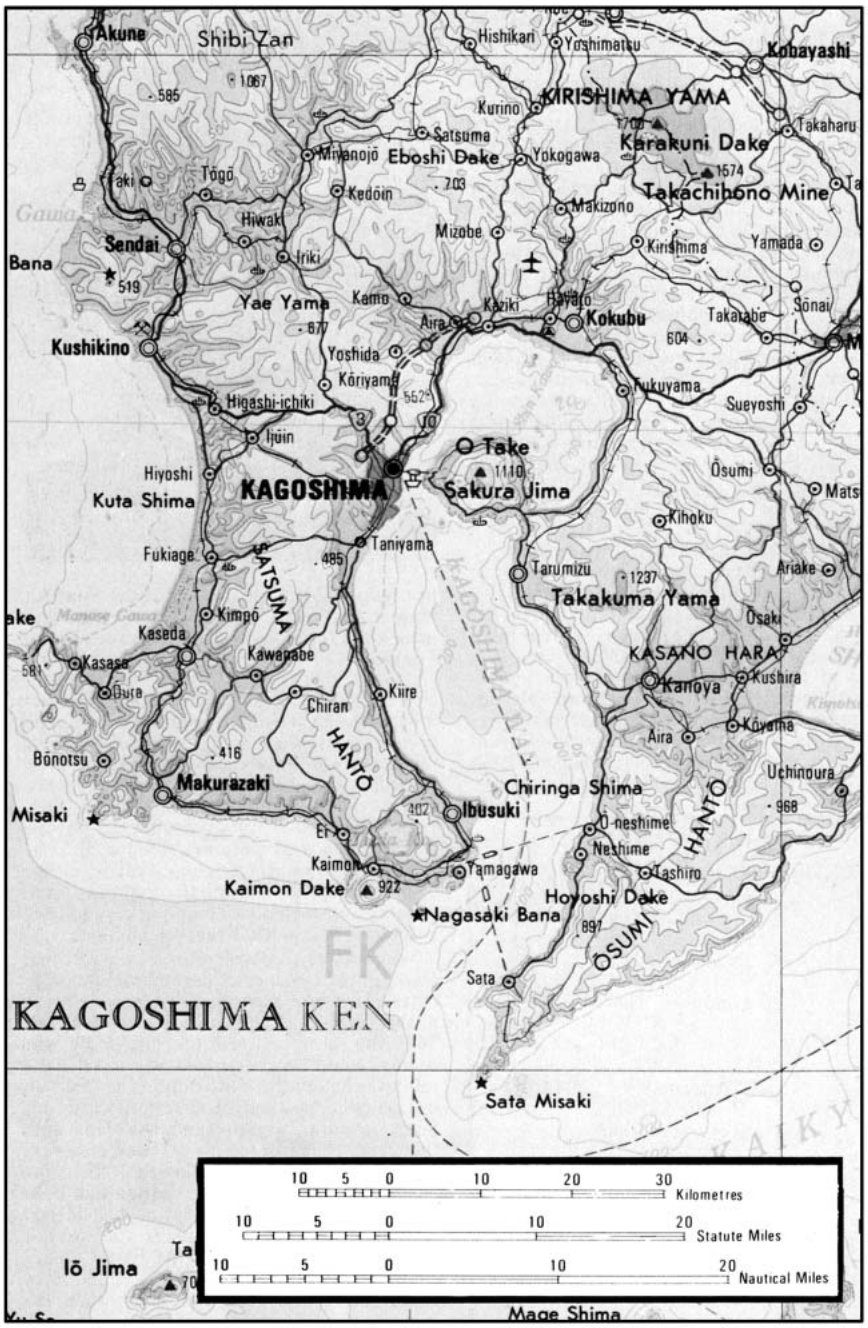
Allen DD66
Antares AKS3
Argonne AG31
**Arizona* BB39
Avocet AVP4
Aylwin DD355
Bagley DD386
Blue DD387
Bobolink AM20
Breese DM18
Cachalot SS170
**California* BB44
Case DD370
**Cassin* DD372
Castor AKS1
Chew DD106
Cockatoo AMc8
Condor AMc14
Conyngham DD371
Crossbill AMc9
Cummings DD365
**Curtiss* AV4
Dale DD353
Detroit CL8
Dewey DD349
Dobbin AD3
Dolphin SS169
**Downes* DD375
Farragut DD348
Gamble DM13
Grebe AM43
**Helena* CL50
**Helm* DD388
Henley DD391
**Honolulu* CL48
Hull DD350
Hulbert AVD6
Jarvis DD393
Keosanqua AT38
MacDonough DD351
**Maryland* BB46
Medusa AR1
Monaghan DD354
Montgomery DM17
Mugford DD389
Narwhal SS167
Navajo AT64
Neosho AO23
**Nevada* BB36
New Orleans CA32
**Oglala* CM4
**Oklahoma* BB37
Ontario AT13
Patterson DD392
Pelias AS14
**Pennsylvania* BB38
Perry DMS17
Phelps DD360
Phoenix CL46
Preble DM20
Pruitt DM22
Pyro AE1
Rail AM26
**Raleigh* CL7
Ralph Talbot DD390
Ramapo AO12
Ramsey DM16
Reedbird AMc30
Reid DD369
Rigel AVD11
Sacramento PG19
St. Louis CL49
San Francisco CA38
Schley DD103
Selfridge DD357
**Shaw* DD373
Sicard DM21
Solace AH5
**Sotoyomo* Tug
Sumner AG32
Sunnadin AT28
Swan AVP7
Tangier AV8
Tautog SS199
**Tennessee* BB43
Tern AM31
Thornton AVD11
Tracy DM19
Trever DMS17
Tucker DD374
Turkey AM13
**Utah* AG16
**Vestal* AR4
Vireo AM52
Ward DD139
Wasmuth DMS15
**West Virginia* BB48
Whitney AD4
Widgeon ASR1
Worden DD352
Zane DMS14

NAVAL YARDCRAFT

YC417	*YR22*	*YT129*
YDD68	*YT153*	*YT146*
YFD2	*YNg17*	*YT119*
YG15	*YN53*	*YT130*
LG17	*YMT5*	*YT152*
YO30	*YN47*	*YR20*
YO43	*YTT3*	

**Sunk or badly damaged in the attack.*

AD Destroyer Tender
AE Ammunition Ship
AG Miscellaneous Auxiliary
AH Hospital Ship
AK Cargo Ship
AM Fleet Minesweeper
AMc Coastal Minesweeper
AO Oiler
AR Repair Ship
AS Submarine Tender
ASR Submarine Rescue Vessel
AT Fleet Tug
AV Seaplane Tender
AVD Seaplane Tender
AVP Seaplane Tender
BB Battleship
CA Heavy Cruiser
CL Light Cruiser
CM Minelayer
DD Destroyer
DM Minelayer
DMS Fast Minesweeper
PG Gunboat
SS Submarine



Located in the south of Kyushu, southernmost of Japan's four islands, lies Kagoshima Bay which resembles Pearl Harbor to a remarkable degree, the volcanic island of Sakura Jima doubling for Ford Island. Here Commander Minoru Genda trained the pilots of the First Carrier Division in the low-level technique developed to drop the special shallow-running torpedoes.

warfare training. He mentioned casually, 'I wonder if an aerial attack can't be made on Pearl Harbor'. The idea was not new; the Naval General Staff had considered the idea over several years but had always come to the conclusion that it was not practical. However, unperturbed, the Admiral worked alone at his plan, going thoroughly through every avenue and possibility, ironing out any possible hitches in order to have a soundly-based plan ready for the time when he would have to put it to his seniors. Nevertheless, his Government was still looking for a diplomatic solution, hoping even at this late date to get what they wanted through a peaceful compromise.

The US Intelligence services, meanwhile, were beginning to get some very interesting feedback from their intercepts. They came to the conclusion that Japan was either intending to attack Russia in maritime territory, pounce upon Yunnan via Indo-China, or intensify operations on the China front. They found nothing to suggest an attack on the East Indies or US territory. Nevertheless, despite a lack of evidence about Japan's warlike intentions, and despite a warning from the US Embassy in Peru in January 1941 that Japan intended to attack Pearl Harbor in the event of war (according to various rumours and hearsay), Japan's increasing mobilisation continued to cause concern, and Ambassador Grew, worried by the setbacks in the talks between the US and Japan, warned of preparations for 'some impending event'. Mobilisation — on July 7 Japan called up a million conscripts — and the calling up of reserves and recall of merchant ships from abroad all served to feed his anxiety.

Since March 1941 the two sides had been engaged in numerous conferences aimed at reaching some mutually acceptable agreement, and Japan had already put forward proposals which would result in America, if she accepted, standing by and giving her a completely free hand; namely, if the US stopped aid to China, Japan would guarantee the independence of the Philippines — due in 1944 — though she also wanted in return recognition of Manchukuo and of her interests in the south. America of course simply could not agree to these demands, but neither could she do very much when Japanese rights to bases in French Indo-China became effective in July 1941. This coincided with US proposals that Indo-China be made neutral, so that all countries could continue trade and commerce, and, when Japan bitterly rejected this proposal, America froze all Japanese and Chinese assets in the US on July 26.

One reason the Americans were prompt in acting this time was perhaps due to the newest intercepts or 'Magics' which exposed Japanese deceit towards Vichy France during the entire time they were quibbling over her Indo-Chinese territories, as what they said in private and what they were doing publicly completely contradicted one another.

Japanese anger at this latest American move demanded some form of counter-retaliation, and on July 28 she froze all US assets in Japan. Seeing little chance of ever curtailing Japanese designs diplomatically, the US tried one more peaceful way of doing so. On August 1, America imposed an oil embargo on Japan. Doing this was tantamount to grabbing Japan by the throat and strangling her to death as she imported 88 per cent of her oil, 80 per cent of which came from the US. No oil, no expansion — no expansion, disintegration. The writing was on the wall.

Japan had stockpiled enough fuel for perhaps two years if used frugally in peacetime. In a war it could not hope to last anything like as long. If the US was going to deny her supplies, it was essential for her very survival as a major power to get those supplies from elsewhere. Roosevelt knew that Japan might do something very desperate following these drastic measures, and together with the Secretary of State, Cordell Hull, embarked on a series of diplomatic initiatives with Ambassador Nomura of Japan with a view to laying the ground-work for a Pacific Conference to try and repair the damage to their relations.

Meanwhile the Japanese had finally made their decision. A meeting of the High Command on September 6 came to the conclusion that Japan would have to go to war with the US if given no other possible alternative. Now the emphasis was to shift from diplomacy to militarism, but it was still vital to keep the US thinking they were following a peaceful course. This was going to be a very hard facade to keep up. Relations were going from bad to worse. In October the more middle-of-the-road Japanese Premier Konoye was forced to resign and was replaced by the hard-line, right-wing Army man General Hideki Tojo. This event put a virtual end to all the furious diplomatic to-ing and fro-ing. Now a hard-liner had taken over, any intentions Japan might have had concerning a peaceful solution were practically eliminated. This was compounded by some extremely sensitive intelligence picked up by US Intelligence which, if read the right way, could condemn Japan completely. In July, news leaked out that the Japanese espionage centre was to be moved from Washington to Buenos Aires. This cast grave suspicions on Japanese intentions because the only reason she would want to do so would be because she was preparing for a breakdown of relations — war in fact — with the US. A man called Hirosawa was found to be intending to move from Washington to Buenos Aires and plans were made to intercept him en route. He was taken, searched, and found to have on him maps of British and US naval bases. This alone convinced many that Japan was getting ready to go to war.

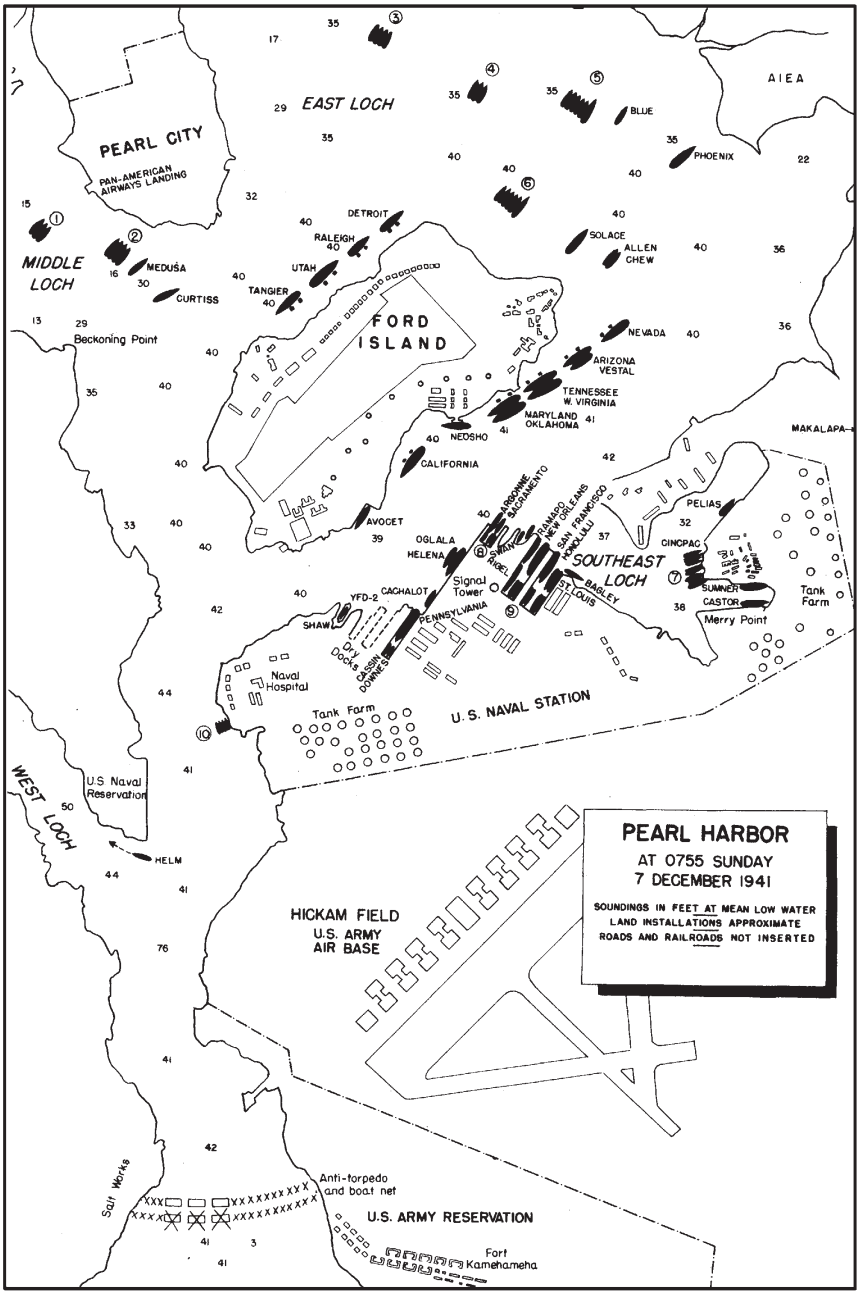
Then, whilst diplomatic parleying was still

going on, a spy at the Japanese consulate in Honolulu received a message from Tokyo. It directed him to divide Pearl Harbor up to enable a count of ships present to be taken and a note of their positions to be made. In fact, the man, known as Kita, had already been sending a weekly report on this basis, but Tokyo obviously wanted to ensure the most up-to-date information, knowing the time must soon come when the intelligence would be needed. Hawaii intercepted the message on September 24 but as they had no decrypting facilities they had to send the message on to Washington still in code. There was only one Pan Am Clipper a week from Honolulu and, as the weather was bad, the September 26 flight was cancelled. Two more days elapsed before the intercept was sent by surface mail and it was finally received by the Signal Intelligence Service in Washington on October 6. But SIS was chronically undermanned and, ironically, though the US knew five of the Japanese codes, only the highest grade codes were given immediate attention. As the intercept was not one of these it had to wait three more days. Even then, because of the crucial state of negotiations, priority was given to correspondence between the Japanese Prime Minister and Ambassador Nomura. Finally, for some inexplicable reason, this most blatant of indications was completely ignored by those who should have passed it on.

About the same time, an intercept of another message from an agent in Hawaii, Ensign Yoshikawa, was decoded. It contained a mention of an improved grid system for Pearl Harbor but this too was allowed to slip through the net. The intelligence services had in fact been intercepting numerous such telegrams concerning other places such as Manila, Panama and Seattle so there seemed very little reason to place any special emphasis upon those of Pearl Harbor or to give it any extra attention. An attack on this base was to them just as likely or unlikely as any attack upon the other places mentioned so each one was given equal priority and vital knowledge was thus lost.

By now Yamamoto had been given the green light to proceed with his plans to attack Pearl Harbor, though many dubious and downright sceptical superiors still had to be brought round to his way of thinking. Up till then, once the decision to go to war had been made, the basic plan was to sit and wait to be attacked by the US fleet; to allow the enemy to steam across the ocean while picking it off piecemeal, gradually denuding its strength and fighting ability until by the time it came into contact with the Japanese it was in no position to fight. Thus the defending fleet could come out of hiding in a position of strength and finish it off. This plan was shown to be very risky now that the great US rebuilding programme was in full swing. If they waited too long, the enemy force would be so strong that its size would easily absorb the kind of punishment the Japanese could inflict, and it would still be in a position to fight and perhaps destroy the Japanese fleet once it reached their home waters. On top of that, with her oil supplies in serious question, Japan could not even be sure any more of being able to sustain her fleet sufficiently to hold its own in an all-out battle with the Americans.

Yamamoto was convinced that Japan's only hope lay in a decisive blow which would cripple the US fleet before it even got under way. With this threat out of the way, Japan could take what she wanted whilst the Americans were licking their wounds; before the US was again in a position to challenge her, Japan would have everything she needed to fight a protracted war. Then, if America was to defeat her, she would have to fight a long and costly campaign which he felt public opinion in the US would not tolerate. Yamamoto strongly believed that America would agree to terms in order to avoid spilling more blood.

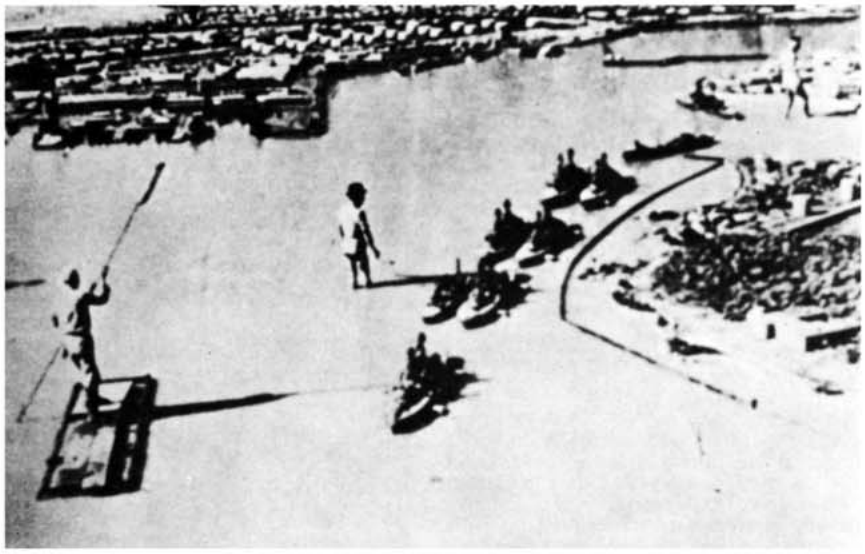


Positions of naval ships in Pearl Harbor at the time of the attack. Groups of ships: 1. Destroyer-minecraft Ramsay, Gamble, Montgomery; 2. Destroyer-minecraft Trever, Breese, Zane, Perry, Wasmuth; 3. Destroyers Monaghan, Farragut, Dale, Aylwin; 4. Destroyers Henley, Patterson, Ralph Talbot; 5. Destroyers Selfridge, Case, Tucker, Reid, Conyngham; tender Whitney; 6. Destroyers Phelps, Macdonough, Worden, Dewey, Hull; tender Dobbin; 7. Submarines Narwhal, Dolphin, Tautog; seaplane tenders Thornton, Hulbert; 8. Destroyers Jarvis and Mugford (inside Argonne and Sacramento); 9. Destroyer Cummings; destroyer-minelayers Preble, Tracy, Pruitt, Sicard; destroyer Schley; minesweeper Grebe; 10. Minesweepers Bobolink, Vireo, Turkey, Rail, Tern. Other auxiliaries not shown were moored in West Loch. There were also tugs and harbour craft in the area of the plan which are not shown. (Reproduced from 'The Rising Sun in the Pacific', with acknowledgement to the Naval Historical Center.)

These were the basic reasons behind his strong belief in his plan, also held by Fukudome and Onishi. He referred to Japan's lightning victories against China and Russia. Then, Japan crushed her enemies by attacking without a declaration of war. Both her victories at Tsushima Strait and Port Arthur could be cited as what fast, well-organised and trained forces could do against a foe ill-prepared to oppose them. In both wars, speed, decisiveness, and excellent planning paid off and brought both conflicts to speedy conclusions. He was determined that the lessons taught by his hero Admiral Togo would not be wasted when Japan embarked on a war which would decide the Empire's future for the next millenium.

But Yamamoto, clever as he was, could not hope to work out the complex plan all on his own. The whole enterprise was so dangerous and filled with questions and problems, all potentially capable of wrecking the whole venture, that it needed a team of experts in all the various fields to be employed to assist and help him in bringing the master plan to fruition. Thus, while the war of words was still going on, the Admiral and his chosen group set about working out the plan.

OPERATION Z — PEARL HARBOR PLAN



Waterborne war games using a convincing mock-up of Pearl Harbor and Battleship Row as featured in the Japanese film of the attack released December 7, 1942.

Firstly, the attack on Pearl Harbor was to be part of a much greater strategy, its primary aim being the seizure of sufficient oil and other raw materials to enable the country to carry out a long and expensive war. Thus, in addition to attacking the American base, there would be simultaneous attacks on Singapore, Hong Kong, the Dutch East Indies and the Philippines.

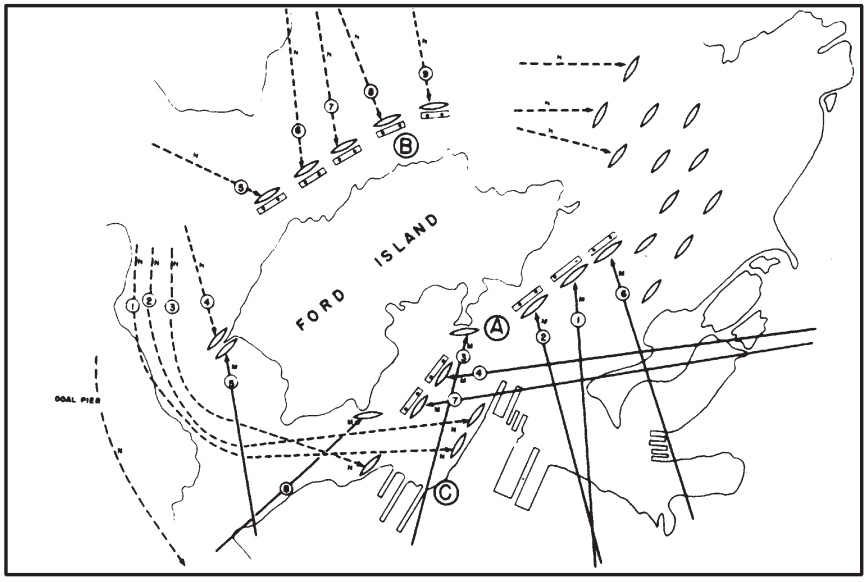
Yamamoto took a lot of encouragement from the outcome of the 1932 Fleet Problem XIV exercise in which Admiral Schofield tried out an attack on Hawaii with carriers and won. Though the Americans themselves failed to grasp the significance of these manoeuvres, Yamamoto did not, and he became convinced as a result that a mighty force of carrier-borne planes could successfully achieve a worthwhile attack on US forces in Oahu. He knew Pearl Harbor better than any other man in the Imperial Navy and he maintained a massive file on the base locked in his desk drawer on his flagship *Nagato*. The file contained all possible information on the target including the topography of Hawaii, charts of its waters, reams of intelligence on the naval and military bases and so on. It had details of the harbour and where the ships were berthed; of training areas within a radius of five hundred miles, and the island's defences. He even knew the pattern of air patrols and the reconnaissance zones, and the normal day-to-day routines of both ships and their crews on duty or on shore. He also understood that because the fleet was busy at sea training and carrying out target practice, it was forced to keep to a strict timetable and routine. Therefore it was reasonable to deduce that it could be expected to be at sea for a certain time and in port for a certain length of time to refit and make repairs, etc. If they did not deviate too dramatically from this system, then a more or less perfect record of the fleet's movements could be drawn up and a sneak attack could be made with a very good chance of successfully sinking every desired ship.

Yamamoto also took into consideration the islands' isolation as, once under attack, they could expect no help from the mainland over two thousand miles away. There was only one way in or our of Pearl Harbor and if one ship could be sunk in the channel then all the rest would be trapped inside. Alternatively, a single submarine outside could bottle up the fleet inside. The ships would need at least three hours' notice to make steam and get under way and long before then they could be sunk. He also felt that the massing of so many ships, fuel storage areas and repair yards made Pearl Harbor a perfect, irresistible target.

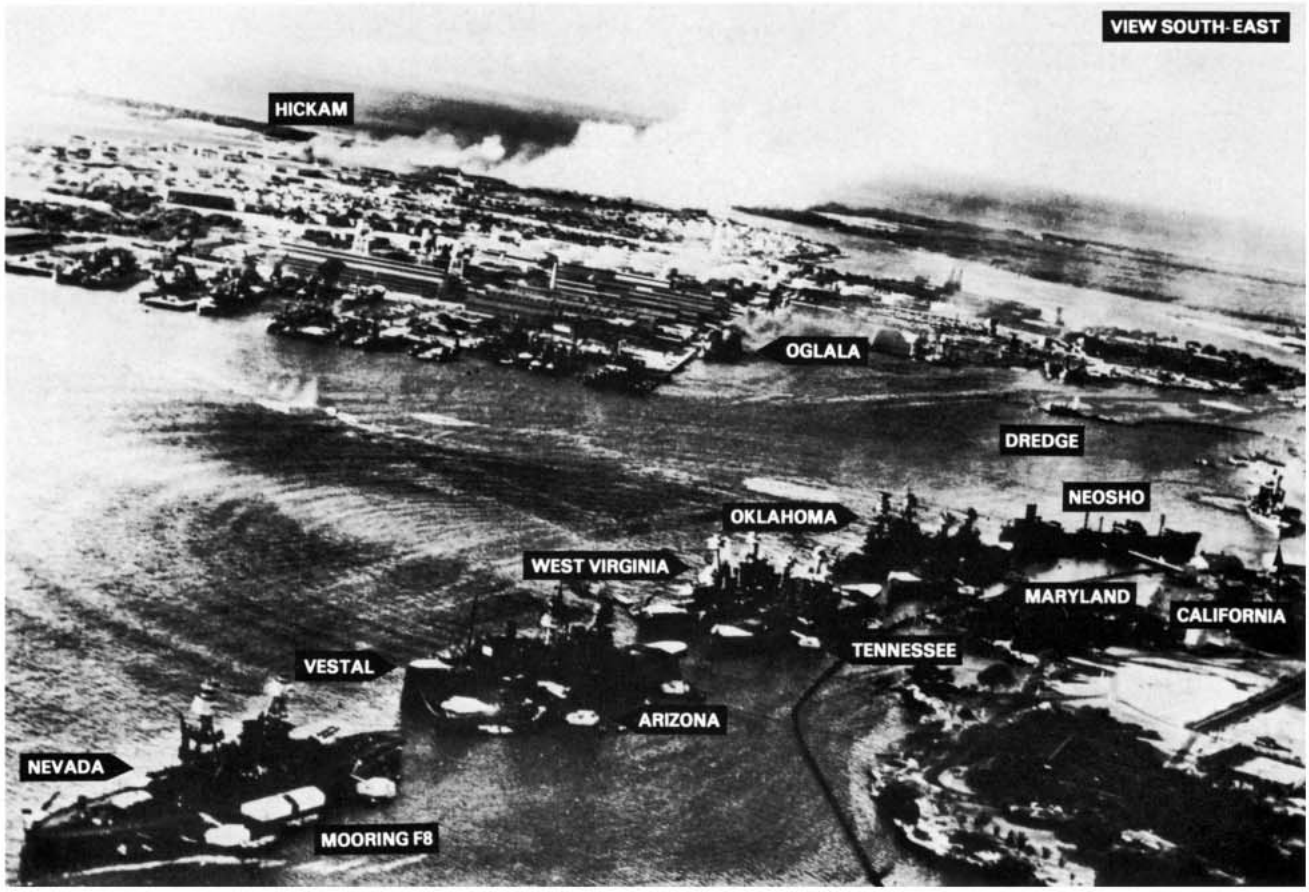
These points were also known to many US Navy men although they were invariably shouted down. Pearl Harbor may not have been perfect but it was all there was. There was nowhere else for crews to rest, for ships to be kept serviceable, and it was the only place in which the fleet could be stationed if it was to have any effect at all as a deterrent to the Japanese. One of the loudest voices belonged to Admiral O. Richardson, in March 1940 C-in-C of the Pacific Fleet, who strongly argued against the basing of the fleet in Hawaiian waters for these reasons. (He eventually became such a nuisance that Roosevelt replaced him with Admiral Husband E. Kimmel.)

Be that as it may, everything that gave the Americans — or some of them — cause for concern encouraged Yamamoto in his belief that the plan was foolproof, and he was sure that it would work if only he could push it through. He knew he had to have a good case before his superiors would even consider it, so, while he still kept it quiet, he decided to get things moving on his own. He began to train his forces, not in the traditional pattern of sea warfare, but in what he called 'Operation Z' — named after Togo's famous 'Z' signal at Tsushima. He looked for a place that looked as much like Pearl as possible — and found it at the south end of Kyushu in Kagoshima Bay. Like Pearl, it had many lochs, and even a little peninsula very similar to Pearl City sticking out into the inner bay. The bay, too, like Pearl, was provided with only one entrance channel. He transferred his fleet carriers there for exercises and, once set up, the carrier-borne planes started to practice; flying in from the north, low over Shiro Mountain following the winding Iwasaki Valley to the shore where they released their dummy bomb loads and torpedoes as they skirted off over the bay.

Yamamoto did not divulge his reason for this change of policy from attacking shipping and concentrating on land targets. He merely said that some day the need might come when the Navy, such as at Nanking in 1937, would be required to help the Army in softening up a city's defences, or something similar. One thing the exercises proved was that ships in harbour were helpless against a determined aerial torpedo assault and, when accompanied with complete surprise, such an attack could hardly fail. His beliefs were proved to be all too prophetic when in November 1940 several completely out-of-date British Fairey Swordfish torpedo biplanes were sent to attack Italian ships moored in Taranto Harbour in southern Italy. These aged bone-shakers, older than anything the Japanese had, flying in two waves of twelve planes, each wave one hour apart, sank or severely disabled three of the Italian battleships. The British lost only two planes and, as a result of the attack, the entire balance of naval power in the Mediterranean was changed. It may have impressed Yamamoto, but it put the fear of God into Secretary of the US Navy Knox: 'The success of the British aerial attack against ships at anchor suggests that precautionary



Based on a chart from a shot-down Kate and modified from Commander Mitsuo Fuchida's notebook, the diagram shows the planned launch positions for the torpedo attacks. The solid lines are those of the two flights under Lieutenant Commander Shigeharu Murata, torpedo bomber leader, and Lieutenant Ichiro Kitajima, while the dotted lines to the west of Ford Island belong to the two groups of Lieutenant Tsuyoshi Nagai of the Soryu and Lieutenant Heita Matsumura on the Hiryu. (From 'At Dawn We Slept' by Gordon W. Prange published by Michael Joseph).

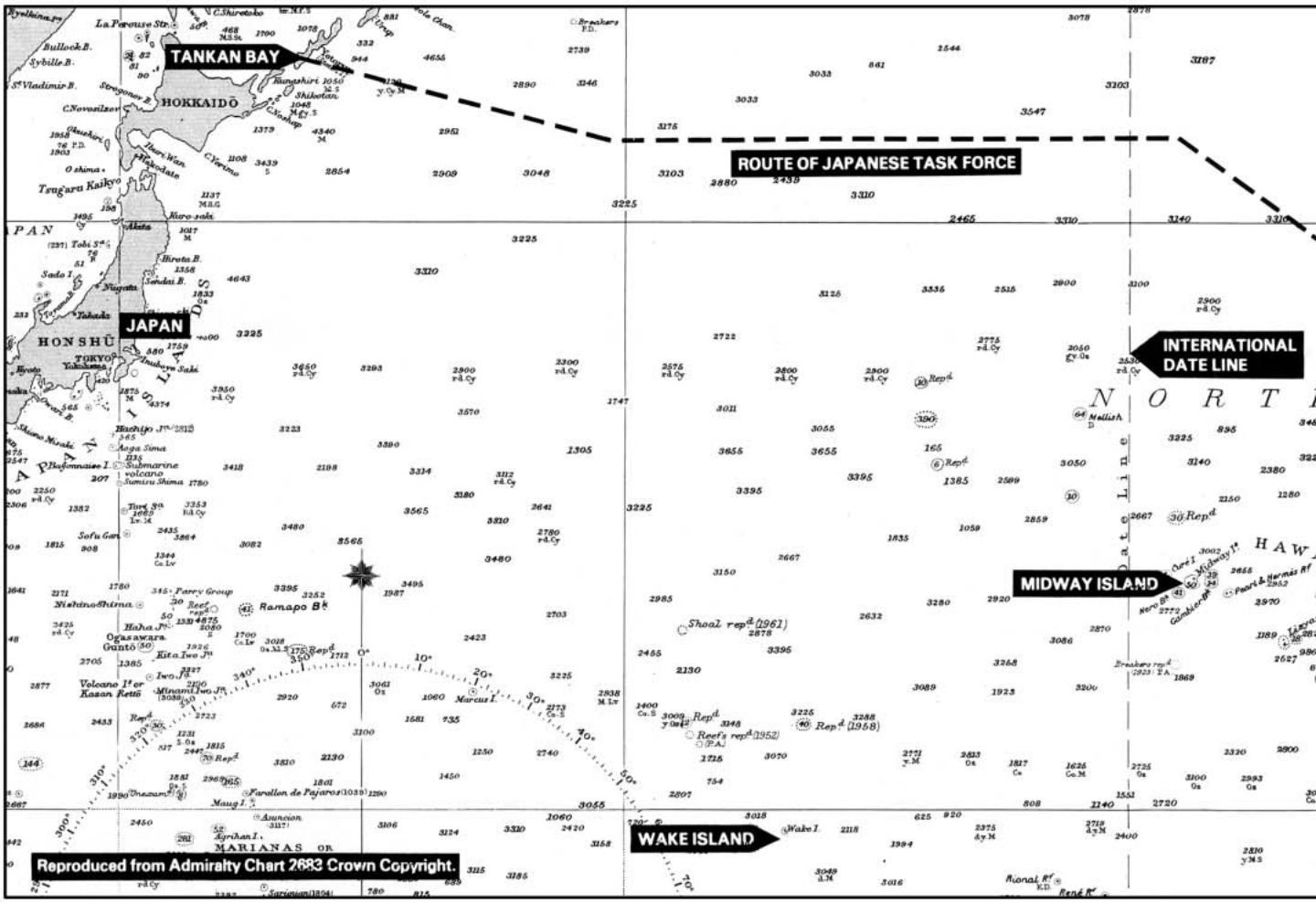


measures be taken immediately to protect Pearl Harbor against surprise attack in the event that war should break out between the United States and Japan.' He added, 'The greatest danger will come from aerial torpedoing. High priority must be given to more interceptor planes and AA guns, and to the installation of additional AA radar equipment.'

Knox may have been talking to deaf ears, but Yamamoto was determined that he was not. With this unexpected, yet undoubted, endorsement of his plans, he set about working out the attack on Pearl with all his energy, sweeping everything else aside to enable him to concentrate on this task alone. In his discussions with Rear Admiral Takijiro Onishi, Chief of Staff to the land-based XIth Air Fleet, it was deliberated as to whether or not land-based aircraft, rather than carrier-based, might not be preferable. However, considering the distances involved, this was shelved and, as the problems weighed more and more heavily, Onishi's enthusiasm waned. Perhaps to work his way out of the cumbersome planning, he suggested that Yamamoto call upon the services of a young officer, Minoru Genda, who also believed in the power of the aircraft, and he did so in January 1941. Filled with enthusiasm for the idea, Genda went away and shut himself away from any distractions to go through all the pros and cons. For ten days he mulled it over, adding some of his own thoughts and ideas whilst dispensing with some of the Admiral's, before reporting his conclusions to Onishi.

'I criticised the plan', Genda later recalled, 'but concluded that the attack, while extremely difficult to mount, would not be impossible to execute with a reasonable chance of success.' Nevertheless, there were aspects of the plan with which he strongly disagreed. The Admiral saw the destruction of US battleship strength as of prime importance, but Genda felt that it was the carriers that should be attacked first. He argued that if they both agreed that aerial

Above: **The attack in reality. Several torpedo tracks can be discerned, almost exactly on the planned lines. The photo has been taken very early in the attack (which began at 7.55 a.m.), and makes an almost exact comparison with that of the mock-up** *opposite* **(National Archives).** *Below:* **Battleship Row today with the memorial spanning the sunken wreck of the Arizona (US Navy).**



superiority was the main tool of a modern war, then the most important thing would be to negate American air power at sea by destroying their floating bases.

The other main bone of contention was Yamamoto's intention to use the aircraft in a one-way suicide mission, which Genda thought a stupid idea, and a criminal waste of manpower. Yamamoto's logic lay in the belief that if this was done then there would be less of a threat to the carriers which could stay well out of range of the Americans. But Genda thought that if the attack was to succeed, then the very elite of the air force would have to be used, and to sacrifice them at the very beginning of the war when there would still be a lot of hard fighting to be done was sheer folly. It would also mean that far from being safer, the carriers would be more at risk because the bulk of their air cover would be gone, and if intercepted by a large enough US force they would be helpless. Genda said that if the enterprise was worked out properly then it could be executed without undue risk to either the aircraft or the carriers.

Genda maintained that as a prerequisite for success, at the very least three hundred planes would be needed. This would make the Hawaii operation the largest ever carrier-borne attack, as at this rate six carriers would be required. This meant that Japan would have to wait until after the summer of 1941 before mounting the attack, as by that time the *Shokaku* and *Zuikaku* would be completed and ready for service. The planes themselves, he insisted, must be manned only by the most experienced crews available, and total and complete surprise was vital.

Following their consultations, Yamamoto gave Genda the job of drawing up a draft plan, which he had ready by March 1941 and two months later the final touches were completed, though there were still some considerable technical problems to overcome, many of which were not solved until the last moment. In order to ensure that the carriers were in harbour when the planes attacked, the agents in Hawaii were told to keep a strict record of US fleet movements. On March 22, Agent Kita was ordered to 'secure intelligence even by bribing informants'. It was intercepted by the US but nothing was done about it. The intercept of September 24, decoded on October 9, should also have caused a furore for it mentioned just one type of ship — the carriers.

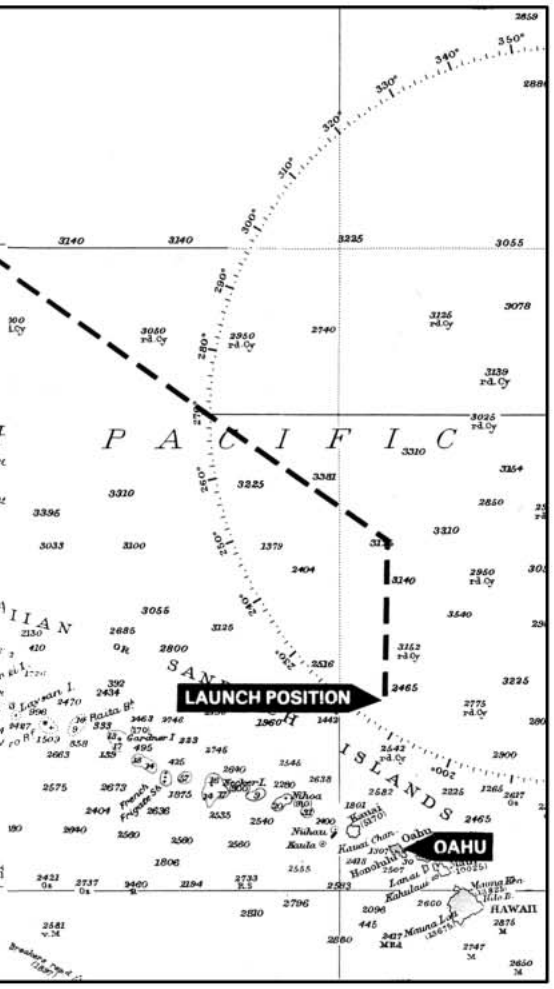
However, Genda was not interested in cloak and dagger stuff, he had practical difficulties to iron out. Still to be properly perfected was the time lapse between the carriers leaving port and the aircraft taking off so that they did so according to the timetable, and the details of the actual plan of attack itself once they actually took off and went in. There were also still problems with the weapons to be used and the question of the recovery of the aircraft after they had made their attack, so that they could get back to the carriers without being followed by American planes.

As for the first point, Genda had to decide which route to take to Hawaii, and determine a take-off point which had the least possible chance of being discovered. Using intelligence trawled from radio intercepts, it was found that American reconnaissance patrols never bothered to fly north of Hawaii, so this was obviously the best direction from which to make their approach. It was hardly surprising, though, that the Americans did not bother to patrol there. Using this route the Japanese would be at the mercy of some of the worst possible weather conditions and some of the stormiest waters known. Even merchant ships avoided the area, so there was little wonder that the Americans would expect an attack force to do so as well. On the other hand, these waters provided excellent cover, for in the autumn and winter fog alternated with bad weather fronts that cut Hawaii off from the north and north-east. Genda reckoned that even if the Americans did by chance send a patrol plane that way, the chances of it seeing anything were very small indeed.

However, the weather still posed another problem: that of refuelling en route. The carriers would have to refuel once, and the escorts twice, and the rough and treacherous conditions were going to make that job a very tricky one indeed. With ships trying to transfer fuel and keep station with one another, the crews were going to have to be very expert ones in any case. Anyway, this was dependent on whether or not the necessary tankers could be got in the first place. In October 1941, Admiral Kusaka, another high-ranking officer, went to Tokyo to try and persuade the high command there to give him the eight tankers essential to the success of the mission but it took several weeks before he received that permission.

However, an even greater stumbling block, perhaps, was the type of torpedo to be used. Even though Genda and Yamamoto agreed that this would be the best type of weapon to use against the enemy ships, there was at that time no torpedo available capable of working at the depth inside Pearl Harbor. Those then in service were designed to be dropped from about 250 feet at a speed of up to 150 knots. The torpedo usually dived to fourteen fathoms before running to their required depth, and they needed to travel some 600 feet before arming themselves. As Pearl Harbor drew no more than eight fathoms these weapons were obviously quite inadequate.

As if this was not enough, there were more worries to come. The Americans moored their ships in pairs, and this obviously meant that

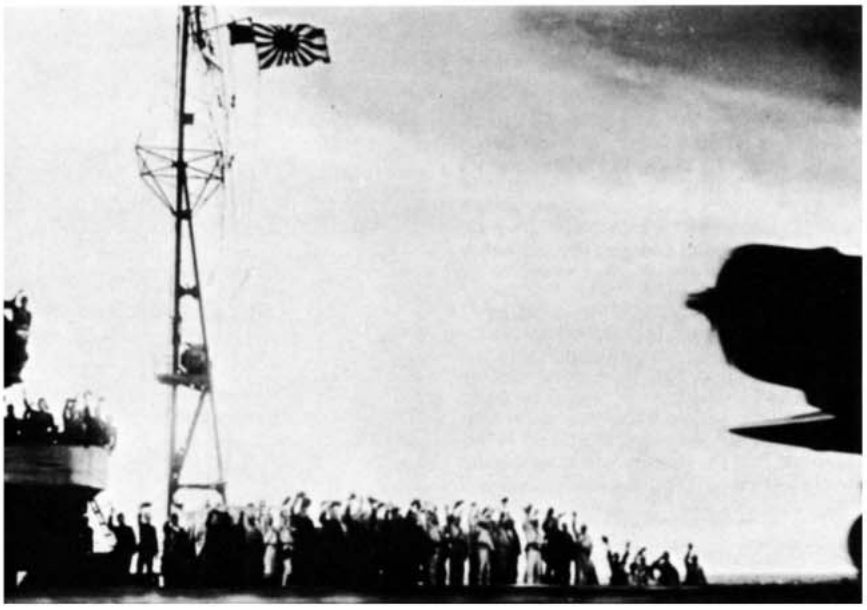


the inboard vessel was shielded from the torpedo by its neighbour. So, to get at the inner ship, the Japanese were going to have to think of something else. They came up with a new type of armour-piercing bomb, weighing up to 1,600lbs, and based on the design of a shell which could be fitted with special fins to give stability. These adaptations could smash their way through anything and, better still, could be quickly produced. They would be ideal for sinking the inboard ships.

As for solving the torpedo problem, that was something else entirely. In September 1941 Mitsuo Fuchida was transferred from the staff of the Third Carrier Division to the aircraft carrier *Akagi* from which he had been moved only a year previously. He later recalled: 'I was given additional duty as commander of all air groups of the First Air Fleet. This was an assignment beyond all my dreams. I felt that something big must be afoot.'

He went to Kagoshima Bay where he was met by Commander Genda: 'Now don't be alarmed Fuchida, but we want you to lead our air force in the event that we attack Pearl Harbor!'

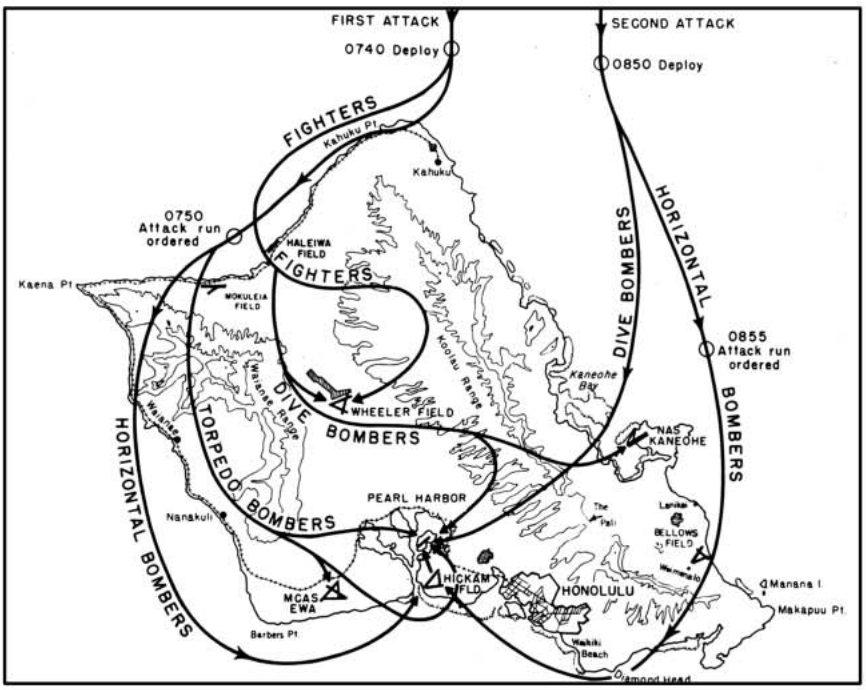
Genda also let him in on the torpedo problem and asked Fuchida to see what he could do about it. Tests were already being conducted and by September these were over with and the production of torpedoes with simple wooden fins was begun. They were thought of as the only way of keeping the weapon shallow-running, and even then were considered only eighty per cent effective. At this late date it was also doubtful if enough torpedoes would be ready in time — a worry which lasted right up to mid-November when the last one was produced. The *Akagi* had to remain behind to pick them all up and continue at full speed to catch up with the main force.



A captured Japanese photograph which purports to depict a rousing 'Banzai' send off given to the pilots on Operation Hawaii. The first wave took off at 6.00 a.m. and the second left an hour later (National Archives).

In order for the new torpedoes to work successfully, they had to be launched at a height of fifty feet and at a speed of 150 knots, so Fuchida had to specially train his pilots so they could handle these demanding and deliberate requirements. After crossing the shoreline, the bombers would have just three seconds in which to line up on their targets and fire their torpedoes or drop their bombs before having to bank steeply away to the right to make room for the following aircraft. Fuchida recalled that: 'There was no time to lose. Our fliers had to work at the hardest kind of training. An added handicap to our efforts lay in the fact that, for security reasons, the pilots could not be told about the plans. Our progress was slow, especially with the problem of launching torpedoes in shallow water. Against my will, I had to demand more and more of every man, yet none complained. They seemed to sense the intensification of the international situation and gave of themselves unquestioningly.'

After several months the crews reached the high standards necessary after practising day and night without a rest. By the end of October, the aircraft were making up to four runs a day and, in the meantime, the dive-bombers had their release point lowered to 1,500 feet to make the chances of a direct hit more likely. Pattern-bombing was also practised, whereby a lead plane dropped the first bomb and the others followed suit. It needed expertise of high proportions, but the end result was an eighty per cent success rate. As a final test, the crews went on an exercise on November 6. They flew two hundred miles from the carriers to targets in Kagoshima Bay, and successfully followed the same attack methods they would use on the day.



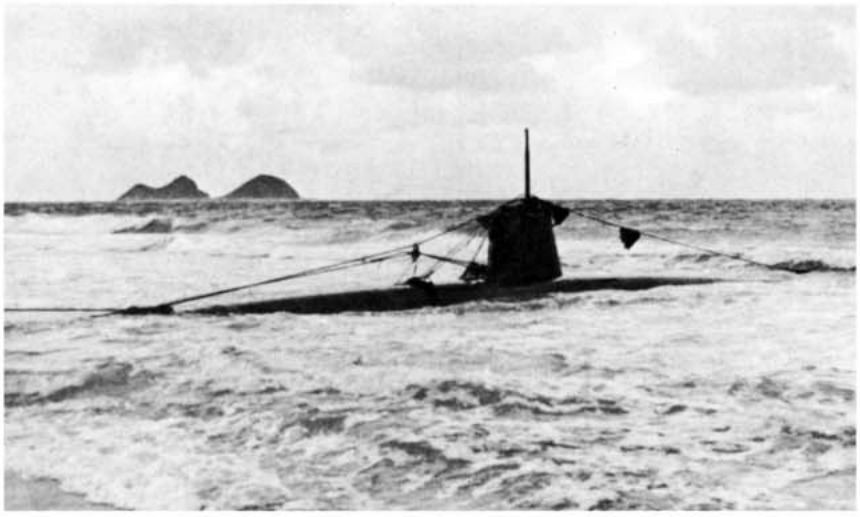
Routes taken by attacking planes at Oahu from information furnished by Captain Mitsuo Fuchida (Reproduced from 'The Rising Sun in the Pacific', with acknowledgement to the Naval Historical Center).

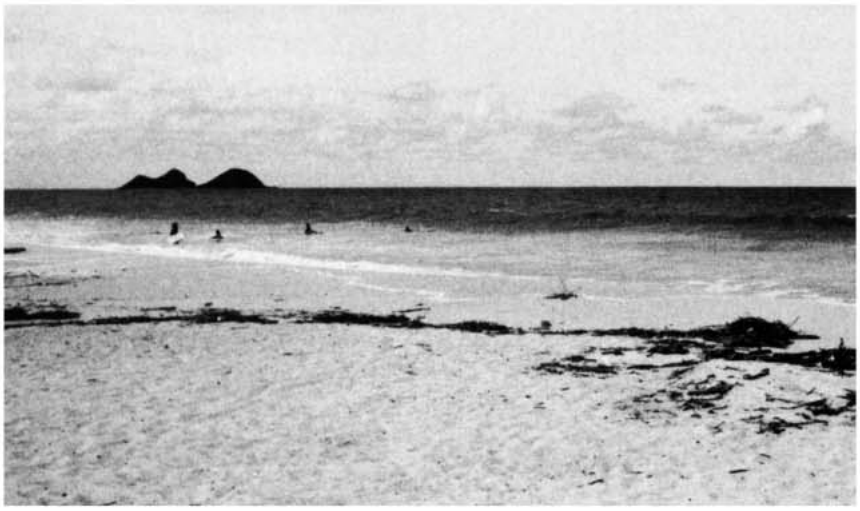
Vice Admiral Shigeru Fukudome was of the opinion that his submarine force would prove a more decisive element in Operation Hawaii. Included in the underwater force were five, two-man midget submarines, each carried to Oahu by mother I-Class submarines of the Special Attack Unit. The midgets, called 'Target A' by the Japanese, were twenty-five metres long, two metres in diameter with a displacement of fifty tons. Although armed with two torpedoes, the Japanese concept of 'Target A' was more of a suicide weapon — a manned, guided torpedo — to be rammed into the target. In the event all ten men failed to return although only two midgets penetrated the harbour. This one, No. 19, commanded by Ensign Kazuo Sakamaki, went aground near Bellows airfield near the south-east corner of Oahu. His shipmate being killed, Sakamaki had the honour of becoming the first Japanese PoW in the Second World War.

In the meantime, Yamamoto was hard at work just trying to get the idea accepted by his superiors. None of the Naval General Staff were particularly impressed when he gave them his detailed proposals. They thought the whole thing was much too risky, putting so much in at the beginning of what would certainly be a long war, but he kept on pushing the idea and made them watch a war game which would test the concept properly. So between September 2-13 the tactics of the attack were tested out at the Naval War College. The attacking team lost two carriers, which did not help very much, and Onishi wanted the idea dropped. On top of that, Admiral Nagano thought December too risky and the weather completely unsuitable. Yamamoto was not to be beaten and finally the Naval Command acquiesced; deciding on a combined assault on Malaya, the Philippines, the Dutch East Indies, and including Pearl Harbor. Nagano held out until November 3 when the attack on Pearl was given in the Combined Fleet Top Secret Order No. 1 spelling out the plan to all relevant commands. The exact date of the attack was agreed as the morning of Sunday, December 7 (December 8 Tokyo time) because December permitted the best opportunity for refuelling and a moon favoured a night run in the harbour. Sunday was best because it was the time when all of Oahu would be fast asleep.

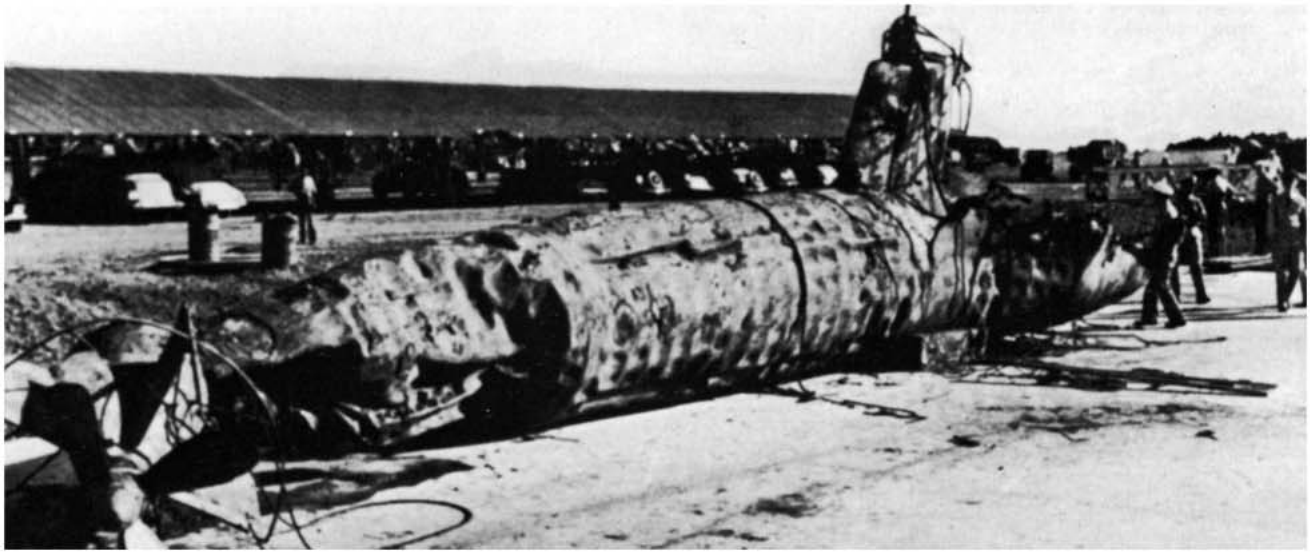
The diplomatic situation was meanwhile fast deteriorating and giving extra impetus to the attack plans. Japan was now threatening to invade Thailand and begin the link-up with the Germans and Italians trying to break through to the Middle East. Faced with this development, the US instructed all American merchant ships in Asiatic waters to make for the nearest friendly port on October 17, and on November 3 Grew warned that embargoes, even that of oil, would not now be sufficient to stop the Japanese. A fortnight later, following the ordering of US Marines out of Shanghai, Peiping and Tientsin by the Japanese, he strongly advised that all possible targets in the event of war should be absolutely alert in the face of sudden attack.

Thus Japan was firmly laying the groundwork for an attack few of them even knew was on the cards. The carrier operation was to be conducted in conjunction with a submarine attack off the target. The task force was to comprise the carriers *Hiryu, Soryu, Zuikaku, Shokaku, Akagi* and *Kaga*, two battleships, *Hiei* and *Kirishima*, two brand new cruisers, *Tone* and *Chikuma*, the light cruiser *Abukuma*, and nine destroyers. There were to be three screening submarines and eight tankers. Two other destroyers would also accompany the group some of the way but they would depart en route to take part in the bombing of Midway which was to be mounted at the same time as the Pearl Harbor attack.





Above: **By walking along the beach at Bellows, Andrew Hyde pinpointed the spot by lining up the islands of Mokulua.** *Below:* **A plaque at the beach club records Sakamaki's capture by Lieutenant P. C. Plybon and Corporal D. M. Akui.**



Above: **One of the two midgets was hit by the gunfire of the Curtiss and depths charges from the Monaghan at 8.35 a.m. Some weeks later it was recovered, rather the worse for wear, the plating displaying a crinkled effect from the explosions (US Navy).** *Below:* **In 1952, during the construction of a new wall to the quay in the submarine base, a dragline uncovered a relic of the attack — the same Japanese midget submarine which had been used as infill during the original construction in 1942. Such was the disinterest in historical artifacts thirty years ago that it was just rolled back into the excavation and covered up . . . where it and its crew lie entombed today (Mrs. William Burford).**

Twenty-seven other submarines were also to take part. Eleven of them carried reconnaissance aircraft, and twenty-five were to take station off Hawaii. The carriers were to steam out of Tankan Bay in the Kuriles and at a speed of thirteen knots proceed to a position 500 miles north of Oahu by December 6. Then, leaving the slower tankers behind, the fleet was to make a high-speed dash through the night and be at its flying-off point 260 miles north of Oahu by dawn. If discovered before it was due to go into action on December 6, the task force was to turn back. If found out on the 6th itself, Nagumo was to decide for himself whether or not to do so.

Admiral Nagumo had never been completely behind the idea from the beginning, but as commander of the First Air Fleet he was the only man for the job. Despite his doubts, once the operation was 'on' he put himself one hundred per cent behind it. But he was definite about one thing: he would carry out his orders to the letter — no more — and his attitude was to be a great contributory factor towards the lost opportunity at Pearl, as many later referred to it.

Each wave would comprise just under two hundred aircraft. A further eighty planes would stay behind to provide air cover for the ships and serve as a reserve. The two waves of planes would launch almost simultaneous raids on the six US air bases and of course Pearl Harbor itself. If they did in fact succeed in taking the enemy by complete surprise, the assault would be led by the torpedo bombers, followed by the high-level bombers with the dive-bombers next. If, on the other hand, surprise was lost, then the fighters and the dive-bombers would lead the attack.

Because, despite the spy network in Oahu, there was no certainty that the carriers would be in the harbour, the bombers would search 150 miles south for them. The problem of evading US planes on their return was solved by having them fly due south before turning round again, well wide of the island, and then flying to their ships. At the same time the six carriers were to remain at their assigned distance and maintain radio silence, and do nothing at all to help the returning planes.

As for the submarines, they were to go in advance of the task force and deploy themselves north and to the east of Oahu, and south — these to be joined by five midget submarines. The midgets were supposed to get into Pearl and wait till the attack started before going to work sinking and generally creating havoc and adding to the Americans' problems. After the attack the submarines were to go to work disrupting lines of communication and supply and sink any ships trying to either escape the harbour or get into it.

COUNTDOWN TO DISASTER

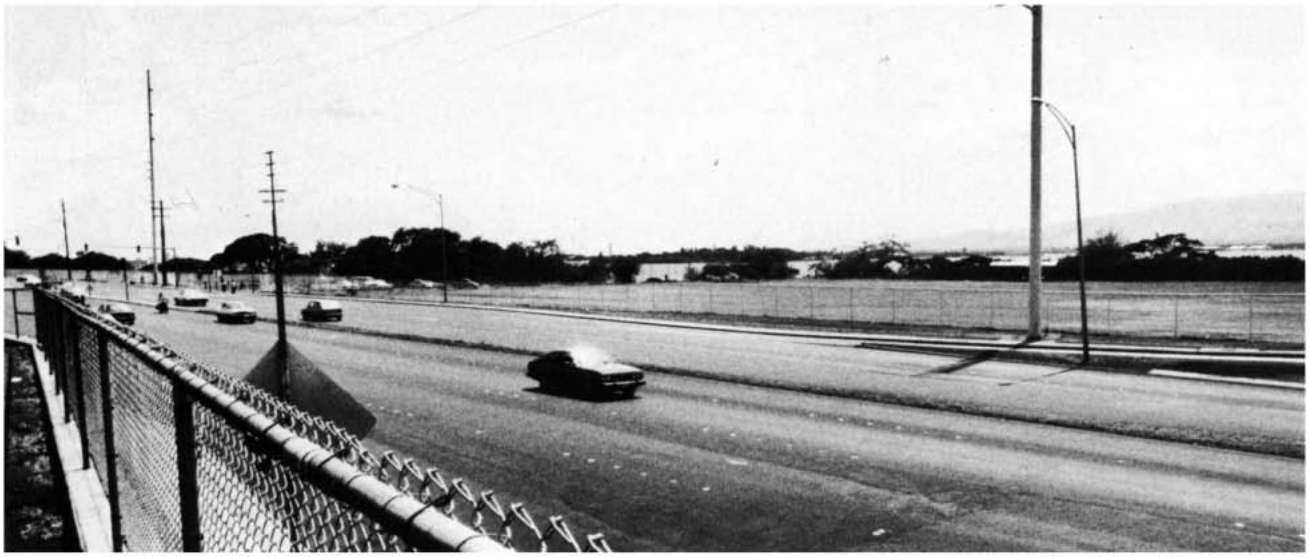
Even as the Japanese prepared the sneak attack on Pearl Harbor, the diplomats struggled to gain through peaceful discussion what the military knew could only be gained by war. Ambassador to the US Nomura was becoming more and more despondent about his being used as a cover behind which the plans were surreptitiously laid. He disliked the underhandedness and trickery he was forced to employ to disguise his country's true intentions. Seeing Nomura lapsing somewhat, his superiors sent along special envoy Kurusu in an attempt to beef up their negotiating stance. Whilst he endeavoured to convince the US negotiators of his nation's good intentions, Japanese transports were sighted off Formosa en route to Malaya on November 25. A week before, Nomura gave to the Americans Japan's 'final proposal' to stave off war in the Pacific. There was nothing in it that she had not previously stated and, consequently, nothing in it which America could concede.

On the 26th, America replied with her own statement, and the following day Chief of US Naval Operations, Admiral H. R. Stark, sent a 'war warning' message to commanders of the Pacific and Atlantic fleets.

The day before, Yamamoto had ordered the fleet to set sail. The US intelligence service should have been fully aware that the wheels had been set in motion. They knew that the Japanese had set a deadline of November 25 for diplomacy to achieve results (later put back four days); if no solution was agreed then the interpreted message stated that 'things will automatically begin to happen'. Another pointer, which should have alerted the US Intelligence Services that something was afoot, was when the Japanese changed their codes on November 1. This in itself should have been sufficient to arouse serious suspicion. They were changed again a month later, and imminent action by the Japanese must have been forecast in many minds.

Above: **At the time of the attack, only sugar cane fields surrounded Pearl Harbor (National Archives).** *Below:* **Today the Kamehameha Highway speeds by, and the white form of the Arizona Memorial in the distance, just above the car in the centre of the picture, provides a sole link with the events of 1941.**

As these blatant warnings went unheeded, the mighty task force of Admiral Chuichi Nagumo made out across the vast Pacific Ocean on the long journey to Pearl Harbor. The treacherous weather alone threatened to scatter the fleet in all directions were it not for the well-trained and disciplined crews. Only the lumbering tankers tended to stray, having to be herded back to the fleet like sheep by the destroyers. The outlook was brighter following a successful refuelling of the ships on the 28th, even though many crewmen were swept over the side in the process. But there was no time to look for them, and they had to be left to their fate as the great armada ploughed inexorably eastwards.



Things improved on the 30th, and the refuelling was getting a little easier, though oil drums piled up on the decks of the *Hiryu* started to dislodge and spill under the force of the waves. Men were sent sliding everywhere and the oil made their work extremely dangerous until it could be cleared up.

To help maintain the secrecy vital to the success of the operation, all signals sent within the fleet were carried out by flag and lamp. No waste could be thrown overboard in case it left a trail and empty oil drums were kept on board. The ships used the highest grade fuel to keep smoke to a minimum.

At an Imperial Conference on December 1, the Japanese finally made up their minds to go to war with the US and the attack force was sent the code message the next day: 'Climb Mount Niitaka' — in other words proceed with the attack. On the same day the Americans intercepted a Japanese coded message directing all diplomatic and consular posts to destroy all codes and ciphers and any confidential or secret documentation — an obvious indication of impending action by Japan. A further message was later received by the Japanese fleet which confirmed the date; 'X-Day will be December 8' (Sunday, December 7 in Hawaii).

Again on December 2, as the hours ticked by, more warnings flooded into the US decoding offices spelling out Japanese intentions. A telegram from Tokyo to the Japanese Consulate was decoded in which Tokyo asked if there were any barrage balloons over Pearl Harbor, and if torpedo nets were in use. Another instruction from Tokyo to Honolulu, requesting a daily update of ship movements and the status of the various air bases, was of no use even when it was fully understood: it was not in high-grade code and consequently it took twenty-eight days to be processed. The evidence, even when available, was completely wasted.

The Americans may have had no use for the messages but the Japanese in the task force certainly had. Yamamoto was relaying the very latest Honolulu intelligence on the US fleet. On December 3 he radioed: 'November 28 — 0800 (local time) Pearl Harbor: two battleships (*Oklahoma — Nevada*); one aircraft carrier (*Enterprise*); two A-Class cruisers; twelve destroyers. Depart. five battleships; three A-Class cruisers, three B-Class cruisers; twelve destroyers; one seaplane carrier enter . . . '

The following day the ships refuelled and crossed the International Date Line. It was December 3 again. They were now 900 miles north of Midway and 1,300 miles north-west of Oahu, and the task force subsequently steered south-east. Another message was received from Tokyo advising them that there were no torpedo nets or barrage balloons, the spy who sent the message, Yoshikawa, adding: 'There is considerable opportunity left for a surprise attack against these places'. This message was not decoded by the US until after the attack.

This was on December 4, and by this time the Americans were aware that the Japanese were using what were called 'wind codes' to inform their people overseas of how relations were going with other countries and to tell them when they were going to declare war and so forth. They were keeping an eye on these, and the day previous a multiple dispatch had been forwarded to the various overseas naval districts from the Office of Naval Intelligence in Washington telling them of the Japanese orders to burn codes and destroy documents. But everything was very general and there were still no warnings for Pearl Harbor in particular.

By now the Americans had discovered that the Japanese Embassy had been ordered to deliver an important note to the Secretary of State in Washington, Cordell Hull, on December 7. With a few hours to spare, the contents of the message were revealed and the Americans correctly assumed it to be a declaration of war.

But while the Americans wasted time, the Japanese made the best use of theirs. They refuelled again on the 4th, and received more information from Tokyo. 'Unable to ascertain whether air alert has been issued. There are no indications of sea alert.' On the 5th, part of the fleet refuelled all day and night and three of the tankers were instructed to leave and wait for the force's return. At dawn on the 6th the rest of the fleet was topped up, and so again were the ships refuelled the previous day. Everything was finished by late morning and the last of the tankers departed.

Every crew member who could be spared was then assembled on the decks of each of the ships and Admiral Yamamoto's message radioed from Tokyo was read aloud to the crewmen: 'The moment has arrived. The rise or fall of our empire is at stake.' There were more speeches and cries of 'Banzai' as the same 'Z' flag flown by Admiral Togo at Tsushima in 1905 was run up *Akaki*'s mast.

The time had now come for the high-speed dash southward to the launch point. By 3.00 p.m. they were 500 miles from the target. In the radio room of the *Hiei*, Commander Kochi received another message: 'December 5 — eight battleships; three Class B cruisers; sixteen destroyers. Entering harbour, four class B cruisers (Honolulu type), five destroyers.'

At 4.55 p.m. the submarine *I-72*, already in position, informed Nagumo that the fleet was definitely not in Lahaina waters — an alternative harbour for the fleet until recently. At 1.20 a.m. another message assured the Admiral that there was 'no indication of any changes in the US fleet or anything else unusual'.

There was great disappointment that the carriers were not there — they were all out on various missions — and perhaps if the Japanese had known about this earlier, the main point of the attack being the destruction of US carrier strength, they would have had second thoughts. However, Nagumo was not concerned. He was instructed to attack the US fleet in harbour regardless of which ships were or were not there, though there was good reason to expect that at least one carrier would be at anchor on the day. The cruisers which normally accompanied the *Enterprise* had returned to port, so it was reasonable to expect that the carrier would not be far behind. To double-check, Nagumo sent ships to search for them but they could not be found at either Pearl or Lahaina Roads. By now the task force had reached its flying-off point, 230 miles north-east of Pearl Harbor.

As the Japanese ships neared the launching area, another vital message was intercepted in Washington in which Nomura was told to submit the note breaking off negotiations at exactly 1300 hours December 7 Washington time. It was sent through a maze of red tape and never reached those who should have acted upon it until it was too late. A special war warning was sent to Pearl Harbor along with other overseas bases, but it did not get to them until the attack was well under way.

Even if one can understand the American mis-interpretation of all the signs of Japanese warlike intentions, it is difficult to comprehend how one of the world's most important naval bases could feel secure without submarine nets. The argument has been put forward that these would have restricted both shipping and seaplane lanes or that they were just not available in sufficient quantity. Nevertheless they were provided later. This picture, taken in 1944, shows the net protecting the Wisconsin which lies alongside the salvaged Oklahoma. The latter at 29,000 tons was a typical WWI dreadnought whereas the 800ft, 45,000-ton Wisconsin was launched in 1943 (Naval Historical Center).

Left: **The attack begins. Two aircraft can be seen attacking Battleship Row on the far side of Ford Island, although none of the ships are on fire or capsizing at this stage. Of all the American vessels in the harbour that day, one was in the news only recently as being the last active survivor present in Pearl Harbor. The light cruiser Phoenix (arrowed) suffered only one Japanese bullet hole in the shield of a range-finder in 1941 but in May**

THE ATTACK

At 6.20 a.m. Hawaii time, the first wave of Nagumo's strike planes was launched and 183 aircraft took to the air in record time. Nagumo planned to hit the Americans with 353 planes in two mighty waves capable of completely swamping the defences. Off they went — first the forty-three Mitsubishi A6M2 Zero-Sen fighter planes to give air cover; then fifty-one Aichi D3A2 Val dive-bombers and forty-nine Nakajima B5N2 Kate bombers. Forty Kates were torpedo bombers, the remainder being armed with the modified bombs. Only one fighter crashed on take off.

The midget submarines were also closing in and at about 4.00 a.m. the minesweeper *Castor* made contact with one of them as it approached the harbour defences. It was only a very brief encounter, and the duty destroyer *Ward* failed to make contact when she went to the aid of *Castor*. As the *Antares* approached the submarine net gate at 6.30 a.m., Seaman Roenbig on the *Ward* spotted something in the water astern. At the same time a PBY 14-P-1, piloted by Ensign William Tanner began circling the object. Ten minutes after the sighting, *Ward* sounded general quarters. Five minutes later an object was sighted a hundred yards away. No. 1 gun opened fire but missed, but No. 3 scored a hit on the conning tower of a Japanese midget submarine. The PBY then proceeded to drop depth-charges. The captain of the *Ward* sent two reports — one at 0651 and another at 0653, to the commander 14th Naval District, telling of the encounter with the enemy submarine, presuming that it must have been sunk because it did not surface again.

As the submarine settled on the harbour floor, the Army radar station at Opana, manned by Privates G. E. Elliott and J. L. Lockard, sighted something unusual on the screen of their radar set. It was a very large group of aircraft 132 miles away and closing in very fast. At 7.06 a.m. Elliott called Fort Shafter Information Centre. The message was relayed to Lieutenant Tyler, the only officer on duty. He suddenly remembered that the carriers were out and so these were probably navy planes. Then he recalled that a large group of army B-17s were due in that morning. It never occurred to him that they might be enemy planes. He sighed, 'Well, don't worry about it.'

While the Opana warning was allowed to

On board the Phoenix was Ensign, later Commander, Ted Hechler in his action station in 'Sky Forward' which controlled the four 5-inch/25 anti-aircraft guns of the starboard battery: 'By shortly after 8.00 a.m. the harbor was a riot of explosions and gunfire. . . . The sky seemed filled with diving planes and the black bursts of exploding anti-aircraft shells. Our batteries were among those firing shells in ''local control'', which meant that the fire was originated from the guns themselves. The Japanese planes were too close for us to take advantage of the more sophisticated automatic control which was normally provided by my station. In essence, the guns were laying out a pattern of steel in the hope that the Japanese planes would fly through it and be damaged in the process. I

1982 she was sunk by British torpedoes in the Falklands war. She had been sold to Argentina in 1951 becoming the Diecisiete De Octubre — the date of Argentina's declaration of independence — but was renamed the General Belgrano in 1956 following the overthrow of Juan Peron (National Archives). *Right:* **Similar aspect today, courtesy of Fleet Composite Squadron One (US Navy).**

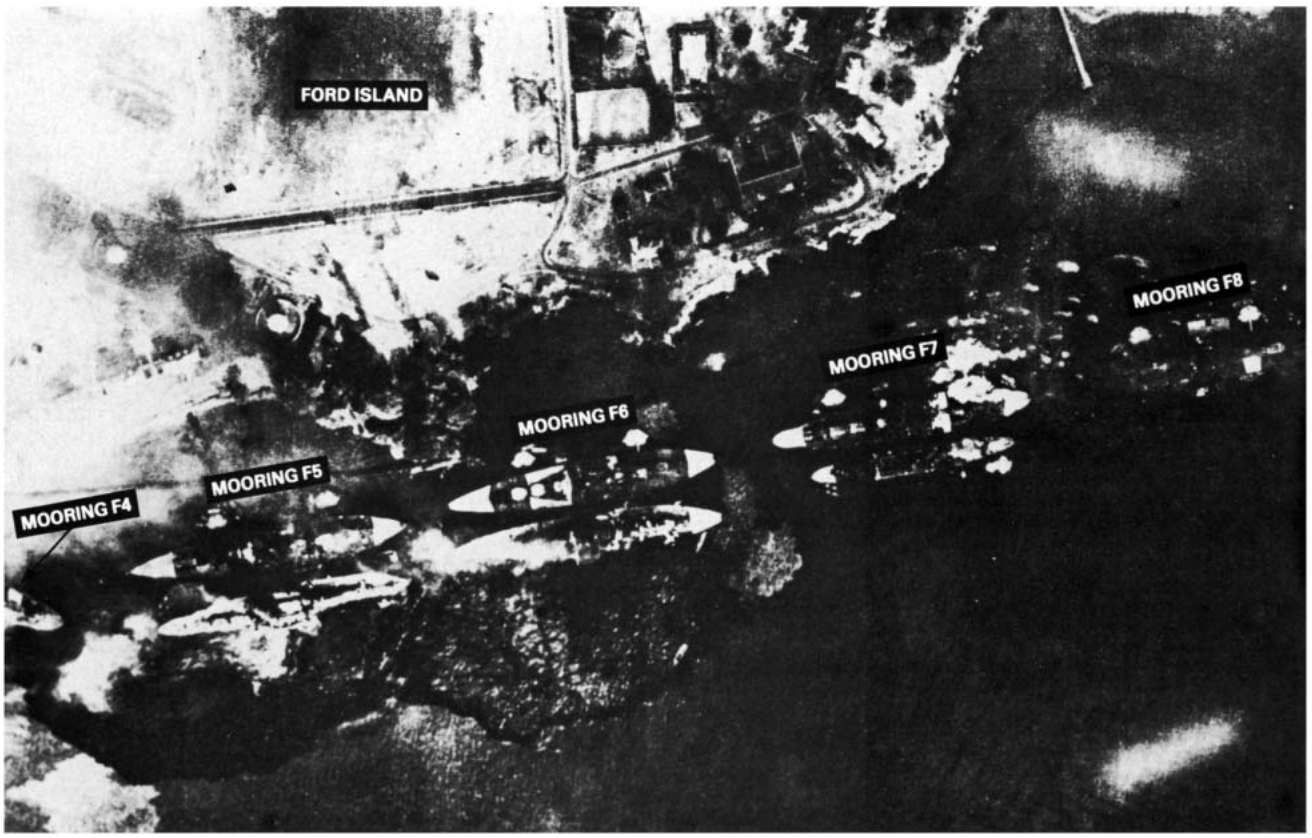
pass by, the message from the *Ward* reached the 14th Naval District HQ at 7.15 a.m. following delays in decoding. Ten minutes later the *Monaghan* was ordered out to assist the *Ward*. The PBY's report was received by HQ CINCPAC at 7.41 a.m., also delayed by decoding. In any event, it was too late now. The attackers were flying in unmolested, watched as they followed the west coast of Oahu by curious eyes, while Fuchida decided upon what form the attack should take — surprise, or surprise lost.

have often described the experience as akin to trying to swat an angry swarm of bees in the confines of a telephone booth. To make matters worse, our shells were set with a minimum peacetime fuze setting which would not permit them to explode until they had reached a safe distance from the ship. In addition, some of the fuzes were defective, with the result that the unexploded projectiles were coming down ashore. Our best weapons under those conditions were the machine guns, which accounted for a number of enemy aircraft'. The panoramic view *left*, **now in the US National Archives, was taken from Aiea Heights — Andrew Hyde's comparison** *above* **from Kaonohi Street near the golf course.**

At 7.40 a.m. he decided that surprise had in fact been achieved, so he fired one flare to indicate this to his pilots. At once the bombers broke away to start their approaches, but the fighters missed the signal from Fuchida and he fired it off again for their benefit. The trouble was that two flares indicated the 'surprise lost' signal, and the dive bombers at once switched their manoeuvres. Instead of the carefully worked out plan for phased attacks, everyone would now attack in one go. Despite this mistake, Fuchida radioed back that complete surprise had been gained — he transmitted the victory signal even before the first bomb went home 'TORA TORA TORA'.

The mighty US Pacific Fleet was doomed. No warning, however phrased or worded, or however believable, would now be of any use.

As the Japanese expected, Pearl Harbor on Sunday, December 7, 1941, was typically quiet and relaxed and the whole island was just waking as the enemy approached. Although what the Japanese considered to be their prime targets, the carriers, were absent, there were still plenty of rich pickings. While all the carriers were out on assignments, eight of the nine battleships were at anchor: the *Arizona, West Virginia, California, Oklahoma, Nevada, Pennsylvania, Tennessee* and *Maryland*. Over half the fleet was, however, elsewhere; many ships were on the West Coast being overhauled, while others were on special duties, including Vice Admiral Halsey's carrier task force 200 miles west of Hawaii on its way to Pearl after the *Enterprise* had delivered Marine Corps' aircraft to Wake. The *Lexington* was 460 miles south of Midway, en route from Pearl Harbor to ferry a Marine Corps bomber squadron to Midway, and had with it three heavy cruisers and five destroyers. The *Saratoga* was on the way to the West Coast from Hawaii. In addition, a task force under Vice Admiral Wilson Brown, consisting of one heavy cruiser and five destroyers and



Another Japanese photo taken early on in the attack. Oil is spreading from the West Virginia and Oklahoma but the Arizona has yet to explode (National Archives).

minesweepers, was off Johnston Island testing a new type of landing craft. Also absent were two heavy cruisers on convoy duty in and around the Solomon Islands and one heavy cruiser with four destroyers and minesweepers about twenty-five miles south of Oahu involved in exercises. The submarines were in the Midway area, and another two in the Wake area. Even so, this still left a formidable force in Pearl Harbor and a very tempting and lucrative target.

As well as the battleships, there were two heavy cruisers, *New Orleans* and *San Francisco*, both 10,000 tons, in the Navy Yard Repair Basin; four light cruisers each of 10,000 tons — *St. Louis*, *Honolulu* and Helena at the Navy Yard docks, and the *Phoenix* moored north-east of Ford Island. At the north-west side of Ford Island lay two light cruisers of 7,000 tons, *Raleigh* and *Detroit*, and to the north and west of Ford Island were moored twenty-nine destroyers — all but three completed since 1933. There were five submarines, four of which were docked at the Submarine Base and the fifth at 1010 Dock in the Navy Yard where a gunboat was also tied up; plus twenty minelayers, some of which were also located at Middle Loch. There were twenty-three fleet auxiliaries — repair ships, oilers, tenders, store ships and tugs located at berths throughout the harbour. Crowning all these, though, were the great battleships which, with the carriers gone, were now going to serve as the main targets of the attack. Weighing between 29,000 and 33,000 tons each, they were moored in 'battleship row' along the south-east shore of Ford Island. The Pacific Fleet flagship *Pennsylvania* was in Dry Dock One in the Navy Yard.

All the ships in the harbour, apart from those being overhauled or repaired in the Navy Yard, were, in accordance with fleet orders, at Readiness Condition Three. This meant that at least one quarter of the anti-aircraft batteries and their control stations were ready for action at all times. All fleet vessels had ready for use their full supply of ammunition plus a reserve supply. In addition, these vessels had to be on twelve hours' notice for getting under way.

These then were the ships of the US Pacific Fleet in Pearl Harbor on the day of the attack. Surprisingly, estimates of the precise number vary, but it is generally considered that ninety-six ships in all were present — give or take a number of smaller unimportant vessels.

Following the sinking of the Japanese midget submarine, the *Ward* picked up another echo on her sound apparatus and she consequently fired five depth-charges which exploded 300 yards astern, and a further report was sent to the 14th Naval district. Admiral Kimmel was finally advised of developments at 7.40 a.m. and he made his way to the harbour.

Whilst time slipped agonisingly by, Pearl slowly woke up as the fleet made ready for morning colours. At 7.55 a.m. the signal tower on top of the Navy Yard water tank hoisted the blue 'prep' flag and every ship in the harbour followed suit. On each ship a crewman took his place in the bow with the 'Jack', another at the stern with the Stars and Stripes. Then at precisely 8.00 a.m. the prep flag was lowered and the other two raised. On the smaller ships a bosun piped his whistle, on the larger a bugler played colours, and on the biggest a band might play the National Anthem. This was the normal routine, although today things were going to happen a little differently.

As the harbour got ready to go through the usual ceremony, strange specks were noticed in the sky far to the south-west. Then others were seen coming in from the north-west, and yet more were noticed approaching from over the mountains to the east. A further group was seen coming in low from the south. Then more planes were seen diving over Ford Island. As the enemy began their bombing runs no-one thought they were Japanese. One man on board the *California* yelled out: 'The Russians must have a carrier visiting us. Here come some planes with the red ball showing clearly'.

Men continued to watch the Japanese as they flew nearer and nearer, shielding their eyes against the sun, exchanging a few words with a neighbour as to who or what they might possibly be. Even as Lieutenant Shigeharu Murata's forty torpedo planes got ready for their final run-in at the battleships, no-one really realised what was happening. Commander Logan Ramsey, Operations Officer at Pat Wing Two, was still investigating the PBY report when a plane zoomed overhead. He assumed it was a reckless pilot trying some aerial acrobatics, and promptly rushed to a window to take his number. Then a bomb whistled earthwards and exploded. He finally grasped the situation. 'Never mind,' he said, 'it's a Jap.' The same plane then passed Rear Admiral Furlong who was on his flagship, the *Oglala*. He at once shouted for general quarters and hoisted the signal for all the harbour to see: 'All ships in harbor sortie'.

Before anyone had a chance to take breath, nine more planes broke off formation and began their attacks on Ford Island where the Naval Air Station PBYs were situated. Concentrating on Hangar Number 6 at the head of the ramp, the aircraft blasted the site to smithereens, the resulting fires consuming seventy flying boats, float planes and carrier-type scout bombers on the field, with another thirty-three destroyed or severely damaged. Apart from a direct hit on the hangar by a bomb which had been intended for the nearby *California*, no more attacks were made on Ford Island for the duration of the raid.

Despite the fact that Pearl Harbor was first hit by dive-bombers, the torpedo planes were to be the major cause of the majority of the damage inflicted. Making four distinct attacks, coming in mainly over Merry Point and the Tank Farm, they flew at heights as low as fifty feet to launch their torpedoes with devastating effect. It still took some very violent reminders to make some men grasp the gravity of the situation. On board the church launch from the repair ship *Vestel*, sailors saw half-a-dozen or so torpedo planes coming in low heading down the loch towards the great battleships. The first real notice they took of

them was when the rear-seat gunners plastered them with machine gun fire, hitting one of the men in the stomach.

While truth dawned on these men, a tragic comic opera was being played out on the deck of the *Nevada*, where the band was waiting to play the Stars and Stripes at precisely 8.00 a.m. As the band began the rousing chorus, an irreverent Japanese dropped one torpedo at the *Arizona* and another plane tried to gun down the helpless band and Marine Honour Guard. Before diving for cover the band completed the ceremony as laid down in the regulations — it had never dawned on anyone to stop playing the National Anthem while only part way through. Then the Officer of the Deck, Joe Taussig, sounded the alarm bell. He at least had caught on. He yelled into the public address system at the top of his voice: 'All hands general quarters. Air Raid. This is no drill!'

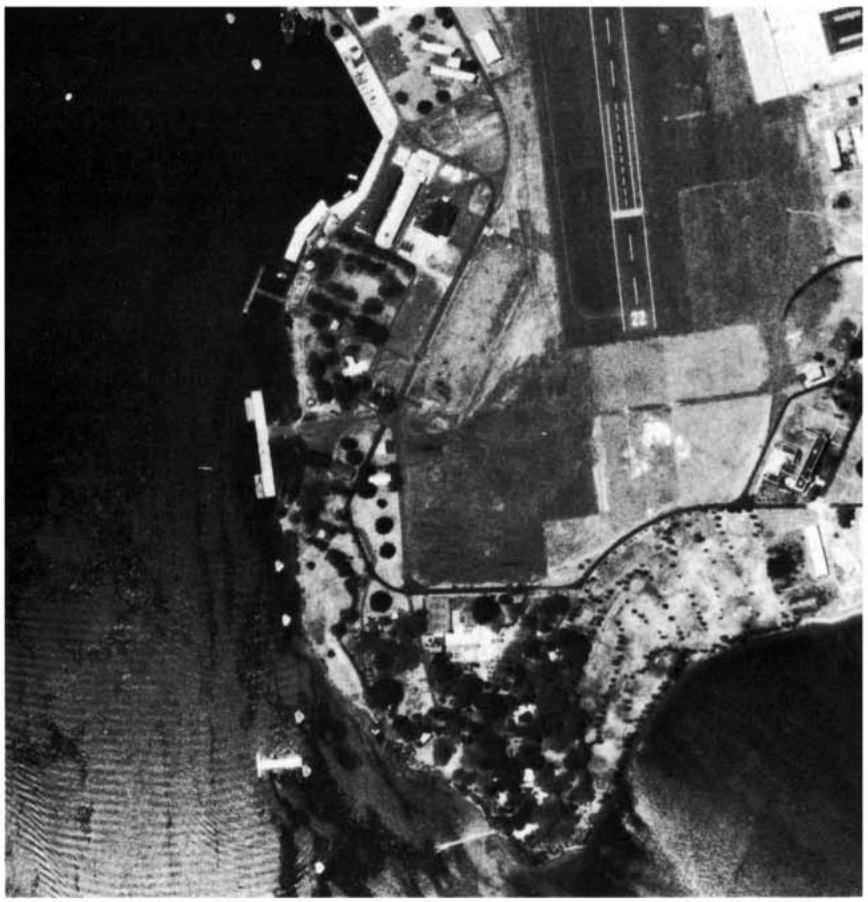
As the missiles fell earthwards, more and more men shouted warnings. The Executive Officer of the supply ship *Castor* cried out: 'The Japs are bombing us!' The Japs are bombing us!' On the submarine *Tautog*, the topside anchor watch shouted down the forward torpedo hatch: 'The war is on, no fooling!' By now alarms were sounding all over the harbour. Klaxons, PA systems, even bugles, all adding to the pandemonium coming from every ship. From the *Oklahoma* came perhaps the most unmistakable of the warnings as the public address sounded throughout the vessel: 'Real planes, real bombs, no shit!'

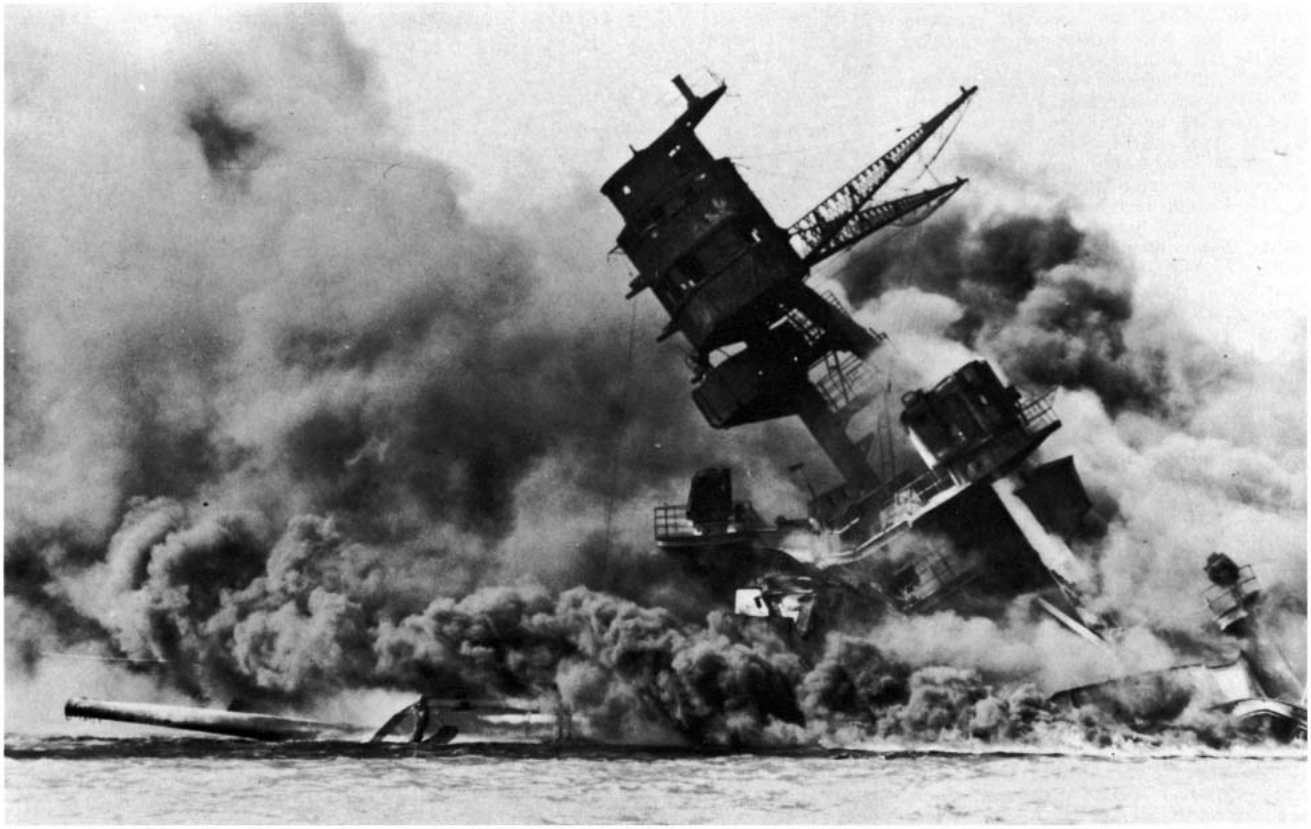
The worst single disaster of the attack, and perhaps the war, occurred before anyone knew what had happened. The *Arizona* — one of the prime targets — was blasted by torpedoes from the first wave followed in quick succession by bombs. The boat deck between No. 4 and No. 6 guns was opened like a tin can by one, and another cut into No. 4 turret. Men tried as best they could to fight the resulting fires but there was no water pressure and no power for the phones when men called for help. Whatever missed the *Arizona* seemed to get the *Vestel* moored alongside. In one instance a bomb went right through an open hatch, through her keel and went off as it passed through the bottom, flooding No. 3 hold setting the ship by the stern. At approximately 8.10 a.m., whilst crewmen continued to fight the raging fires already taking hold, she was hit by a bomb from a high-level bomber. It landed near the No. 2 turret by the forecastle and seconds later the forward magazines erupted like Vesuvius. A mushrooming pillar rose 500 feet into the sky, flame and smoke blanketing both herself and her near neighbours. And that was it; a vicious explosion and the ship was dead, along with 1,177 of her crewmen and Marine detachment. Trapped beneath her decks they stood no chance. The ship sank so fast she did not have time to roll over — she just dropped like a stone to remain upright, squat and twisted.

The force of the terrific explosion sent shock waves throughout the harbour, stalling a pick-up truck on Ford Island, throwing the crew of a water barge onto their faces, and simply dozens of men straight off the nearby battleship *Nevada*. Commander Cassin Young was thrown off the neighbouring *Vestel* and it was a miracle the ship was not taken down with the *Arizona*. Above the harbour even the enemy were not spared the unforgettable results of the eruption as Commander Fuchida's own plane was rocked mercilessly by the blast.

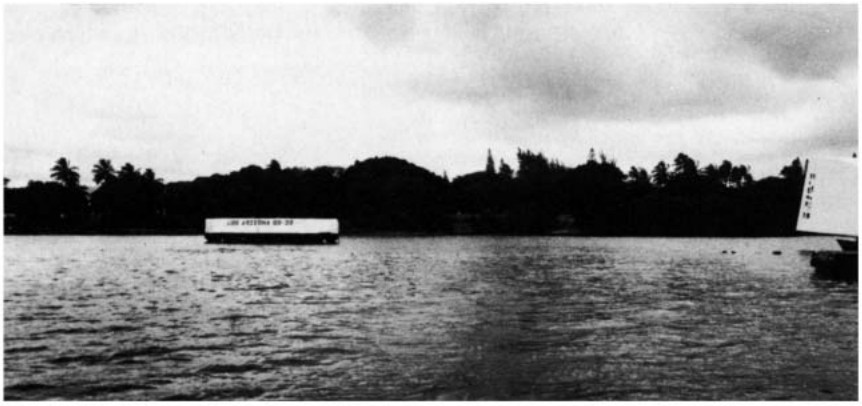
On the ship itself, one fire control officer disappeared in the port anti-aircraft director — the only place he could possibly have gone was through the narrow range-finder slot. On the bridge Rear Admiral Isaac Kidd and Captain Franklin van Falkenburgh were both instantly killed and on the second deck the entire ship's band was massacred to a man.

Above: **Battleship Row after the battle. The Oklahoma has capsized and oil streams from the sunken Arizona (National Archives).** *Below:* **Modern US Navy comparison shot. The quays where the ships were moored appear as white dots — the oblong Arizona Memorial now straddles the ship which was never raised.**





Above: **Greatest tragedy to befall the US fleet was the loss of 1,177 men, including Rear Admiral Isaac C. Kidd, when the Arizona, an old ship launched in 1913, sank at Mooring F7 (US Army).** *Below:* **A lone buoy marks the spot where the bow lies although very little of the ship remains to be seen above the 40-foot deep water today.**



The *Vestel* had to be hurriedly pulled clear of the fiercely burning wreck as superstructure crashed down and burning oil threatened to engulf the ship. A tug tied up to her and she made good her escape, though not before taking on board many of the fortunate survivors from the *Arizona*. She spent the rest of the attack in the comparative safety of Aiea Landing. Other men made their own ways to safety, swimming to Ford Island or other ships, grabbing hold of debris and floating wreckage. The many small launches and boats buzzing in and around the ships also accounted for many of the desperate men.

The second torpedo attack claimed the *Oklahoma*; no sooner had the alarm sounded than the first of seven torpedoes had struck her tearing open her side. The second torpedo put out her lights, the next three ripped open what little remained of her port side. She began to capsize and went over to about thirty degrees. Two more torpedoes smashed into her shell as she rolled still further. Within twenty minutes of the attack she had rolled over about 150 degrees. Men abandoned ship if they could, walking with the roll and scrambling over her starboard side. Less fortunate were the men still below decks when the torpedoes rammed home. As the water rose the emergency lights went out and the list increased, tearing loose fixtures and fittings: thousand pound shells, eight-foot reels of steel towing cable, chairs, tables and equipment of every kind. Searching for any way out, one group of men crawled up an exhaust ventilator.

Finally, just after 8.30 a.m., her masts and superstructure touched the harbour bottom and only then did she stop rolling — transformed from a mighty man-of-war into a chunk of worthless scrap metal. In her bowels men were still trying to get out, swimming, spluttering, struggling in the few, dwindling air pockets that formed with her capsizing. Some fortunate enough to be on deck used ropes to swing across to the *Maryland*, next door. Like the *Arizona*'s survivors, many others were picked up by launches or swam directly to Ford Island — that is if they could bypass the pools of burning oil that enveloped the ships. Still more floundered, others drowned. In all, the Japanese attack was to claim the lives of 315 officers and men of the USS *Oklahoma* — most of whom were trapped inside the ship.

The *Maryland* was only to be a haven for the men of the *Oklahoma* for a short time for the Japanese soon directed their attention to her. Moored inboard of the *Oklahoma*, she was spared the torpedoes, but was a target for the bombs, specially-devised just for ships in such positions. She was blasted by two, both of the 15-inch variety. The first struck the forecastle awning punching a hole about twelve by twenty feet. It caused some damage in the compartments below but nothing serious but the results of the second bomb were much worse. This one entered the hull at the twenty-two foot water-line at Frame 10. It went off inside the battleship and a great deal of extensive flooding was started as a result, lowering the vessel's bow by five feet. Fortunately though, *Maryland* suffered a relatively low casualty rate with four officers and men killed or missing. *Maryland* gave as much as she took — shooting down a torpedo bomber before it had time to loose off its missile.

Meanwhile the *California* was consolidating her fate. At 8.05 p.m. she had been hit by two torpedoes, one after the other. Had she not been opened up for inspection the result might have been different, but, as it was, nearly all of her hatches and covers had been removed, and there was absolutely nothing to stop water from pouring straight through the length and breadth of the battleship. She slowly settled in the harbour mud as the truth finally dawned on CINCPAC, sending out a message to all concerned — the Chief of Naval Operations, the C-in-C Atlantic Fleet, the C-in-C Asiatic Fleet, and all forces at sea: 'AIR RAID PEARL HARBOR. THIS IS NO DRILL'

The *Tennessee* was also hit in this series of attacks. She too was an inboard ship, spared the ravages of being torpedoed. Like the *Maryland*, two bombs were sufficient to remove her from the action. One found its mark on No. 2 turret, the second on No. 3 turret, sending showers of debris and splinters

in all directions. One chunk of debris from the *Tennessee* flew through the air and disembowelled the captain of the *West Virginia*, Mervyn Bennion, as he went about directing his own ship's defence.

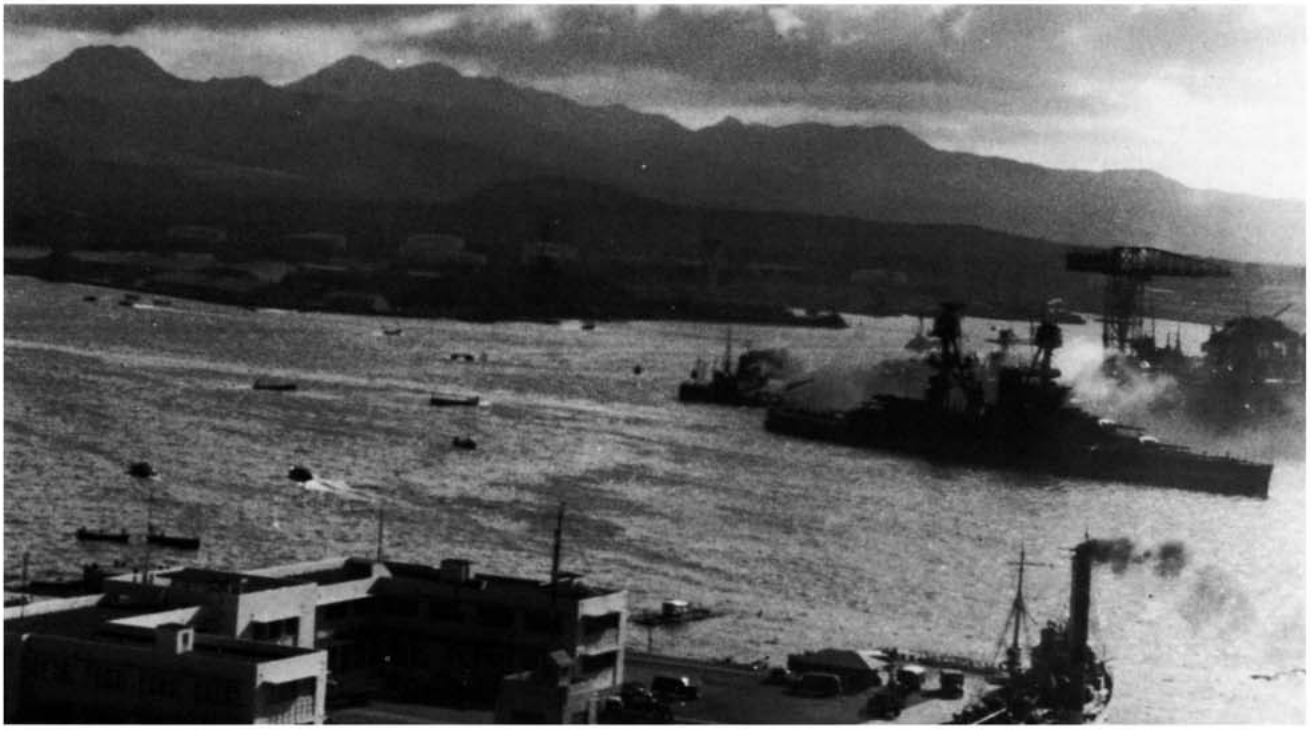
In the third attack, a single torpedo plane aimed at the cruiser *Helena*, moored at 1010 Dock. The minelayer *Oglala* was moored outside of her but the torpedo ran completely underneath her and struck the *Helena* in her engine room. Despite the fact it was *Helena* that was actually hit, the *Oglala* suffered worst — the force of the explosion against the *Helena* buckling her side plates and throwing men in all directions. This was aggravated by a bomb which fell in between the two ships and she lost her power altogether. Two passing tugs were pressed into service which helped her crewmen to move the *Oglala* to the dock astern of the *Helena* where flooding went on unabated. Two hours later she rolled over. Many men who saw her go claim to this day that the old ship — she was built in 1906 — simply sank from fright.

The fourth attack wave came in over Pearl City and Middle Loch and hit the ships moored on the opposite side of Ford Island from Battleship Row. This was the normal berth of the carriers when they were in port but today they were occupied by a variety of vessels. The target ship *Utah* was one together with the light cruisers *Raleigh* and *Detroit* and the seaplane tender *Tangier*. Before the crews knew what had happened, a torpedo plowed into the *Raleigh* just opposite her second funnel, and two more hit the *Utah*. The *Tangier* and *Detroit* escaped damage altogether whilst the crews on the other ships fought desperately to stem the ravages of the fires. The *Utah*, covered in thick timber to cushion the blows of so many practice hits, probably looked sufficiently similar to a real aircraft carrier to warrant the attentions of the eager Japanese pilots. In any case four torpedoes were more than enough to send the creaking old ship rolling over almost immediately. Listing to port, the angle of the ship started the huge timbers gradually sliding off the decks and onto the crewmen as they tried to climb up them and get off. She finally turned turtle completely at 8.13 a.m., trapping many unfortunate men inside her holds and interior compartments.

The *Raleigh* was rather more fortunate. She started to roll over after taking a bad list to port. Water poured into Nos. 1 and 2 boiler-rooms, flooding the forward engine rooms, and contaminating the fuel oil and knocking out all power. Her crewmen feverishly put out extra lines to the quays and literally held her upright until the attack was completed. In order to lighten her as much as possible, everything that could be was thrown overboard — aircraft . . . lockers . . . simply anything that could be prised loose — although, even in the turmoil a sailor kept a note of where everything went in order that it could be recovered later on. Her problems were later multiplied when a bomb hit her and threatened to capsize her completely.

Other planes in the third attack wave hit the battleship *West Virginia*. She took the first of five torpedoes directly underneath the casemate, followed by more, some of which passed through the holes created by their predecessors. Then, as she began to list, the damage control officer, Lieutenant Commander J. S. Harper, tried counterflooding to make the ship sink on an even keel. It worked and the 'WeeVee', as she was affectionately called, swung back to starboard and settled on the harbour mud. But her ordeal was far from over. Two more bomb hits telescoped together her three armoured decks forward of the bridge, and most of the ship between the forecastle and forward turrets burned out. Her rudder was also knocked off by torpedoes, and her crew fought fire after fire for the next thirty hours. As soon as they got one fire under control, another would break out

Above: **The Oglala (Lalie for short), named after a tribe of the Sioux Indians, originally started her life as a passenger ferry, the Massachusetts. Renamed USS Shawmut, she helped lay the North Sea mine barrage in WWI, and she received her third name in 1928. On the morning of December 7 she was moored outside Helena at 1010 Dock of the Navy yard. Although a torpedo passed right under her keel to explode against the starboard side of Helena, the pressure wave ruptured the lower port steel plating. The Commander of the Mine Force, Rear Admiral William R. Furlong, aboard her at the time, realised that the sinking of his flagship could jam the cruiser against the dock. He therefore commandeered several tugs to pull her clear before she sank (National Archives).** *Below:* **This plaque at berth Baker 2 records the event.**



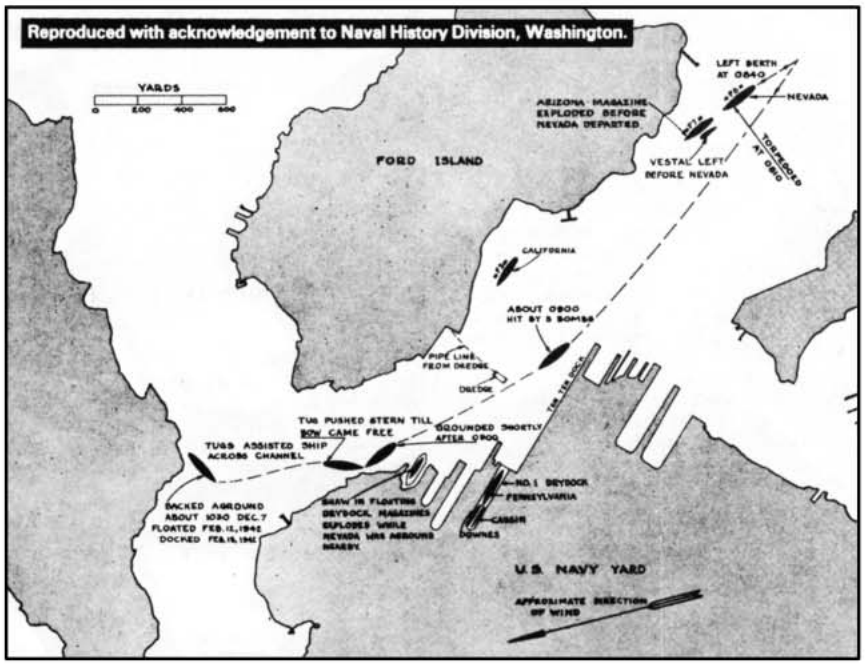
Above: **The Nevada was the only battleship able to get up enough steam to make a break for the open sea (to the right). Already suffering one torpedo hit, Lieutenant Commander Francis Thomas's brave attempt was countermanded by instructions from the shore to prevent the ship sinking and blocking the harbour entrance — something the Japanese would have dearly loved to achieve.**

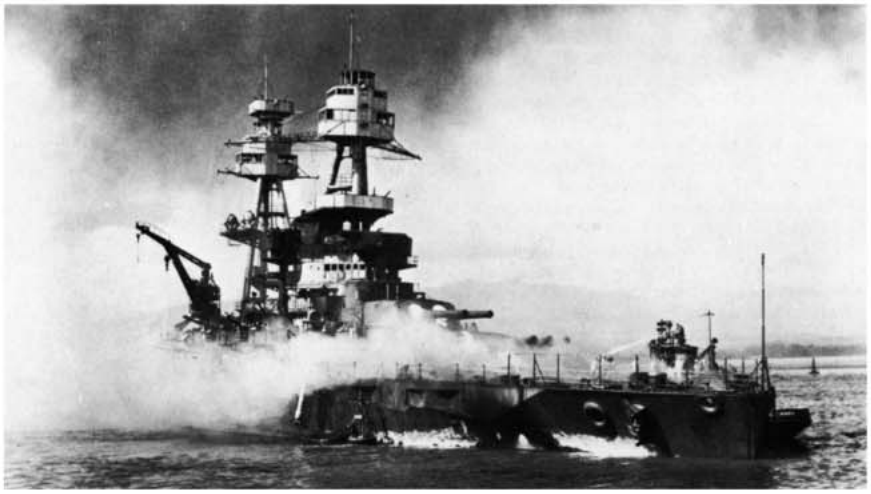
elsewhere, burning oil from the *Arizona* entering through the holes made by the torpedoes and starting them up again.

The *Nevada* pumped anti-aircraft fire into one Japanese plane as she made her run-in towards her. For a moment it looked as if the aircraft had been hit but just as it seemed to hit the water it veered up again releasing its torpedo at the battleship's bow. This tore a great gash, and seconds later a bomb exploded on the starboard anti-aircraft director, followed by another.

By 8.25 a.m. the vast majority of Admiral Kimmel's fleet had been sunk or severely disabled. The *California*, *West Virginia*, *Oklahoma*, *Arizona*, *Tennessee* and *Nevada* had all been sunk or severely damaged, and many other ships were in little better state or condition. However, by now the ships in harbour had come alive with their anti-aircraft fire-power and were making a marked impression on the raiders. Guns from every quarter had been set up and were filling the air with lead, forcing every pilot to fly through a curtain of fire in order to reach his target. Readiness Condition Three had at least permitted many ships to go into action immediately, unless badly crippled soon afterwards, and they were joined eventually by many others as time passed. The *Nevada* hit at least two planes in the first few minutes, and the *Tangier* another. The old seaplane tender *Avocet* brought down one of the aircraft that torpedoed the *California*. The less harassed crews of the destroyers and the other ships in harbour added considerable firepower for the more heavily attacked battleships and Ford Island.

Between 8.25 and 8.40 a.m. there followed


Reproduced with acknowledgement to Naval History Division, Washington.
YARDS
FORD ISLAND
ARIZONA MAGAZINE EXPLODED BEFORE NEVADA DEPARTED
LEFT BERTH AT 0840
NEVADA
VESTAL LEFT BEFORE NEVADA
CALIFORNIA
ABOUT 0900 HIT BY 5 BOMBS
PIPE LINE FROM DREDGE
DREDGE
TUG PUSHED STERN TILL BOW CAME FREE
GROUNDED SHORTLY AFTER 0900
TUGS ASSISTED SHIP ACROSS CHANNEL
BACKED AGROUND ABOUT 1030 DEC. 7 FLOATED FEB. 12, 1942 DOCKED FEB. 19, 1942
DRAWN IN FLOATING DRYDOCK, MAGAZINES EXPLODED WHILE NEVADA WAS AGROUND NEARBY
NO. 1 DRYDOCK
PENNSYLVANIA
CASSIN
DOWNES
U.S. NAVY YARD
APPROXIMATE DIRECTION OF WIND



The plan indicates her route. Unable to make Middle Loch, she was first run ashore at Hospital Point, just south of the shipyard (National Archives).

what is generally considered to have been a lull in the fighting. About fifteen dive-bombers participated in five attacks on ships in the Navy Yard, on the *Oklahoma*, *Maryland*, *Nevada* and *Pennsylvania*, and on various light cruisers and destroyers, although a far more serious engagement took place during this time when a far more ominous threat was uncovered.

At 8.17 a.m. the *Helm*, the only ship then under way, made contact with a midget submarine as it made its way out of the harbour entrance. It was spotted a thousand yards to starboard and the *Helm* immediately went into action. However, despite her speedy reaction, *Helm* lost contact, but at once warned HQ: 'Small Jap sub trying to penetrate channel'. The rest of the harbour was then warned via signal flags. Then, at 8.30 a.m. the destroyer/minelayer *Breese* sighted another submarine, and the *Medusa* and the *Curtiss* saw it as well. More warning flags fluttered and the ships were immediately joined by the *Monoghan*. All four ships opened up on the submarine which returned the fire, narrowly missing the *Medusa* and the *Monoghan*. The *Monaghan* hit the submarine and the *Curtiss* put a shell right through the submarine's conning tower, before the *Monoghan* blew it up with a shallow pattern of depth charges set at thirty feet. Unfortunately the ship was going so fast that she did not have enough time to manoeuvre before driving ashore at Beckoning Point — but it was worth it to rid the harbour of one midget submarine

Meanwhile, the second wave of Japanese were fast approaching, of which seventy-eight were heading for Pearl Harbor. The remainder of the 170 aircraft were to hit the airfields and provide more air cover, but this time Pearl Harbor, or rather the ships in it, were ready for them. Guns of all shapes and sizes: .50-calibre machine guns, pom-poms, hand-held guns, and even rifles, all were poised to present a withering wall of fire for the approaching Japanese.

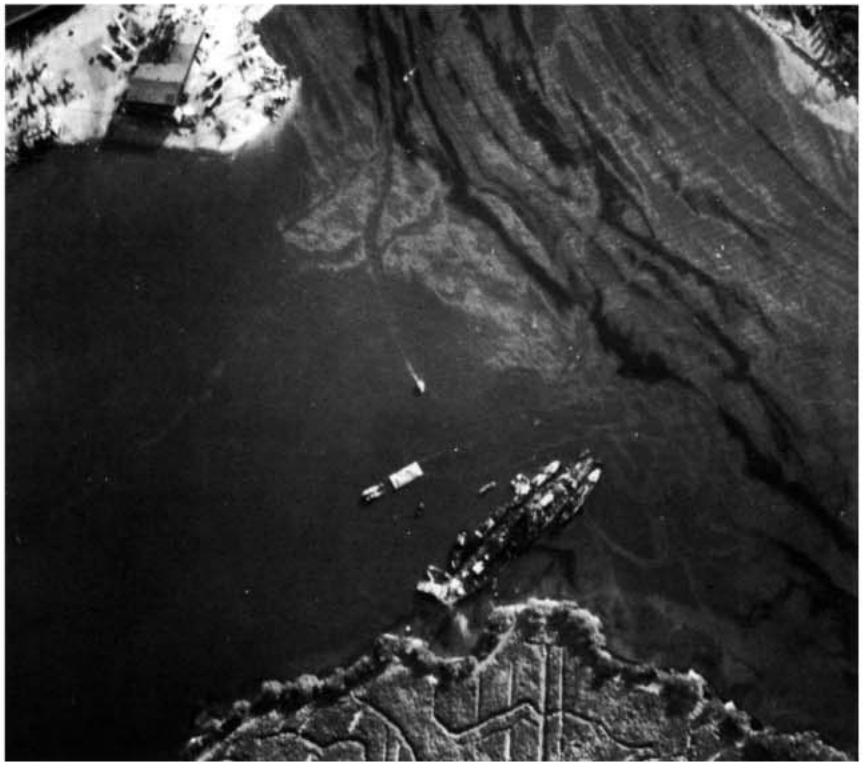
They arrived at 8.40 a.m. and the *Maryland* and *Helena* downed three between them almost at once. A dive-bomber crashed near Ford Island, another plane into the main channel near the *Nevada*, and a third was shot down off Pearl City. So excited were the men now that they were shooting at practically anything that moved and when they spotted eighteen US planes flying into Ford Island from the carrier *Enterprise* they opened up without bothering to check if they were friendly or not. The astounded pilots were taken completely by surprise and darting, wheeling and diving to escape the harbour guns as thousands of rounds filled the sky, the friendly Americans received a hotter reception than any of the Japs. They eventually escaped but only after several had been shot down.

In the harbour, the Japanese were pounding away once more. Crossing and recrossing the harbour at 10,000 feet, they dropped bombs along battleship row and on the Navy Yard. The *California* had suffered a further bomb hit before the main force of Japanese arrived, which exploded on the second deck and started a fire. The *Curtiss*, which had only just helped to sink the midget submarine, had a bomb hit on her main deck which killed twenty men and wounded fifty-eight others. She then fired on another bomber pulling out of a dive over the Naval Air Station and set it on fire but the plane crashed on the *Curtiss* and several oil fires were started as a result.

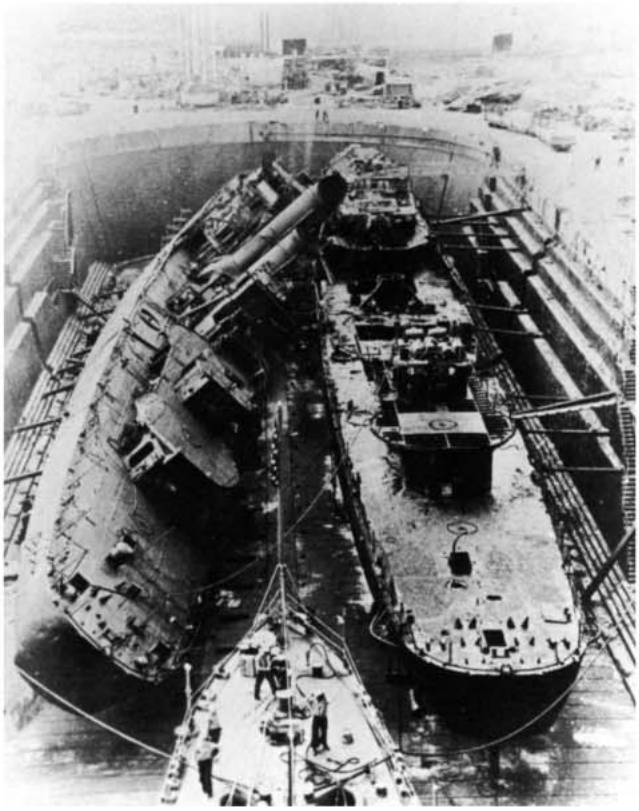
Meanwhile the *West Virginia* took another furious beating. One explosion lifted the ship out of the water, and another on the starboard side wiped out the crew of one gun and decimated another.

By now a few destroyers were slowly getting under way — the *Blue*, *Dale*, *Aylwin*, *Henley*, and *Phelps*, but it was the *Nevada*'s dash to the harbour entrance which was to provide the latest breathtaking spectacle. Normally it took three hours thirty minutes for a battleship to fire up her boilers and be manoeuvred into the channel by at least four tugs. But now she had done it all in forty-five minutes and without any help at all. The *Nevada* was making her own way into deep water, her flags proudly flying. As she made her way it seemed as if the Japanese were of one mind to sink her alone — thus completely blocking the channel and stopping any ships at all from getting out. The *Nevada* kept on going in spite of the fact that by now she was taking such a battering, and was seen to settle deeper and deeper, that it was certain that she must come to a grinding halt and sink where she was. The Naval District HQ flew signal flags ordering her to stay clear of the channel and, although her crew were certain they could get out, they obeyed orders and eventually grounded the *Nevada* on the Waipio Peninsula after a short stop at Hospital Point. She was turned round by the current to face the way she had come and then another group of planes dived on her and three bombs exploded near the bow.

However, it was her action which saved



Although salvage work commenced promptly, it was a month before the flooding was stopped on the Nevada. The torpedo hole was found to be 48ft long and 25ft deep. Note the wrecked aircraft beside the damaged Hanger No. 6 on the southern corner of Ford Island — conspicuously missing today! (National Archives and US Navy)



Left: **The shambles of Dry Dock No. 1. The Downes (left) and Cassin, both 1,500-ton Cummings Class destroyers, were docked in front of the 33,000-ton Pennsylvania. Both suffered several bomb hits, as did the dock itself, and caught fire which spread to the fuel oil, ammunition, and torpedoes. Although the Yard wanted to flood the dock to help extinguish the fires, this was not done until after 9.00 a.m. — by which time explosions had caused extensive damage. As the water level rose, the Cassin came afloat stern first, then became unstable and fell over onto the Downes (National Archives).** *Right:* **The Pennsylvania was taken out of the dock on December 12 when the Downes was set upright on blocking. The Cassin was left in her toppled state until holes on her port side had been patched.**

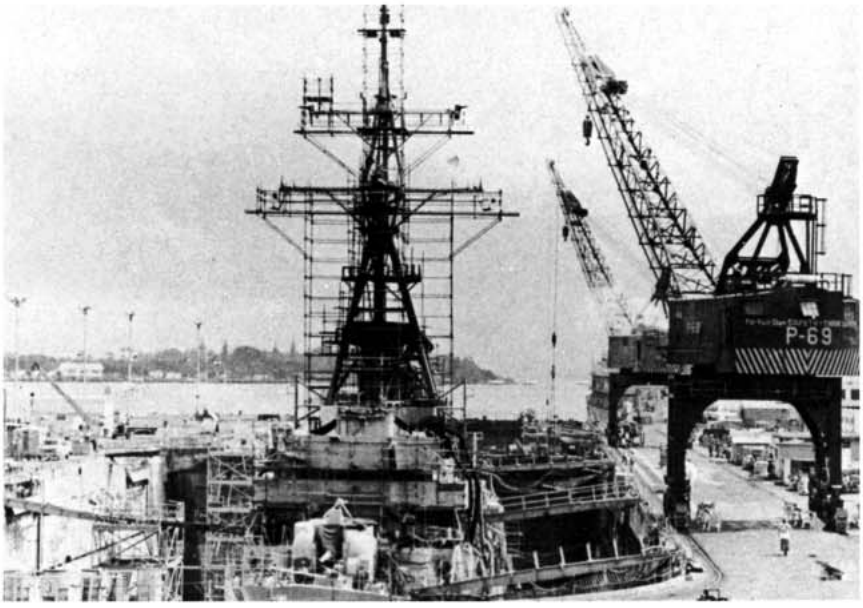
many other lives. Attracting the attention of so many enemy planes, the Japanese ignored completely the aviation fuel tanker *Neosho*, anchored between the *Oklahoma* and *Maryland*. She got moving at 8.35 a.m. and Japanese aircraft, bent on getting bigger and better targets in their sights, let her continue untouched. Had they realised she was half full of fuel, and had they hit and ignited her, she could have taken three or four battleships and many lives with her.

By 9.00 a.m. it was the turn of ships spared in the earlier attacks. The ships in dry dock No. 1 — the battleship *Pennsylvania* and the destroyers *Cassin* and *Downes*, and the destroyer *Shaw* in the new floating dry dock a few hundred yards to the west, waited helplessly. Planes closed on the dry dock from every direction, and Captain Charles Cook of the *Pennsylvania* saw that if the lock gates were hit, the onrush of water would sweep his ship onto the destroyers. To prevent this he ordered the gates opened and the dock partially flooded which also permitted the battleship to rise level of the dockside, whereupon her anti-aircraft guns could be brought into action. The battleship was hit just once, at 9.06 a.m. in the starboard casemate, but the destroyers were hit time and time again. Before the dock was completely flooded they were both aflame and the *Cassin* was rocked by an enormous explosion at 9.37 a.m. which caused it to keel right over to starboard and roll on top of the *Downes*.

Even greater drama was now about to unfold with the *Shaw*. She sustained a very damaging bomb hit at 9.12 a.m. which started a terrible fire. It spread throughout the ship, and continued unabated until it reached the forward magazine at 9.30 a.m. At that point there was the most awful ear-shattering explosion which tore away the complete bow of the destroyer. A huge rolling ball of flame shot into the air taking with it fragments of the ship itself which then dropped back onto the hundreds of startled onlookers. One of her 5-inch shells was blown half-a-mile across the bay before landing on Ford Island where fortunately it failed to explode, grinding to a halt before one of the hangars.

The 8,325-ton destroyer tender *Dobbin*, moored at Ford Island's northern end, was extensively damaged by a near miss which exploded off her starboard side. Debris and shrapnel seared across her afterdecks, chopping chunks off her mainmast and funnel. The blast also disintegrated a whaleboat and killed the entire crew of No. 4 Gun.

The *Honolulu*, moored next to the *St. Louis* in one of the Navy Yard's finger piers was shaken by a bomb which smashed through the concrete pier on the ship's port side. The explosion holed her oil tanks and warped the armour plating. With this damage she had no chance of getting out — which she was planning to do. The *St. Louis* had better luck.



Above: **Nowadays the dock is out of bounds to visitors but this 'approved' photograph shows an American warship in the same dock today.**

The Shaw was a sister ship to the Cassin built by the Philadelphia Navy Yard. She was berthed in Floating Dry Dock No. 2 when hit by three bombs which ruptured her fuel tanks, the fire subsequently causing the forward magazine to explode.

She was under way by 9.31 a.m. Outside the channel entrance, two torpedoes were fired at her by one of the midget submarines. She hastily returned the fire and possibly hit it, accounting for, it is thought, the fourth of the five submarines lost by the Japanese during the attack.

By now it was all but over. The attack was petering out and by about 9.45 a.m., apart from a couple of sporadic strafing attacks, all the Japanese aircraft had gone, leaving eighteen ships sunk or seriously damaged behind them and a harbour in complete disarray. In the meantime, other attacks had been taking place at Oahu's military and other bases throughout the island.

When the Floating Dry Dock No. 2 sank, the forward part of the Shaw went with it but the rear section from frame 60 aft was buoyant. Although at first considered a total loss, within six weeks a false bow had been fitted and on February 9 she departed for Mare Island Navy Yard where she was transformed into a front-line destroyer. At least 155 holes had to be sealed before the dock itself could be raised on January 9, 1942 — the Shaw being her first customer.

Because of the presence of American submarines in the Navy Yard, security restrictions on photography make this the best comparison shot possible — looking from Ford Island beside Battleship Row to where the Shaw was docked.

Above: **Sailors struggle to save a Consolidated PBY by the ramp near Hangar 1 at Kaneohe Naval Air Station.**

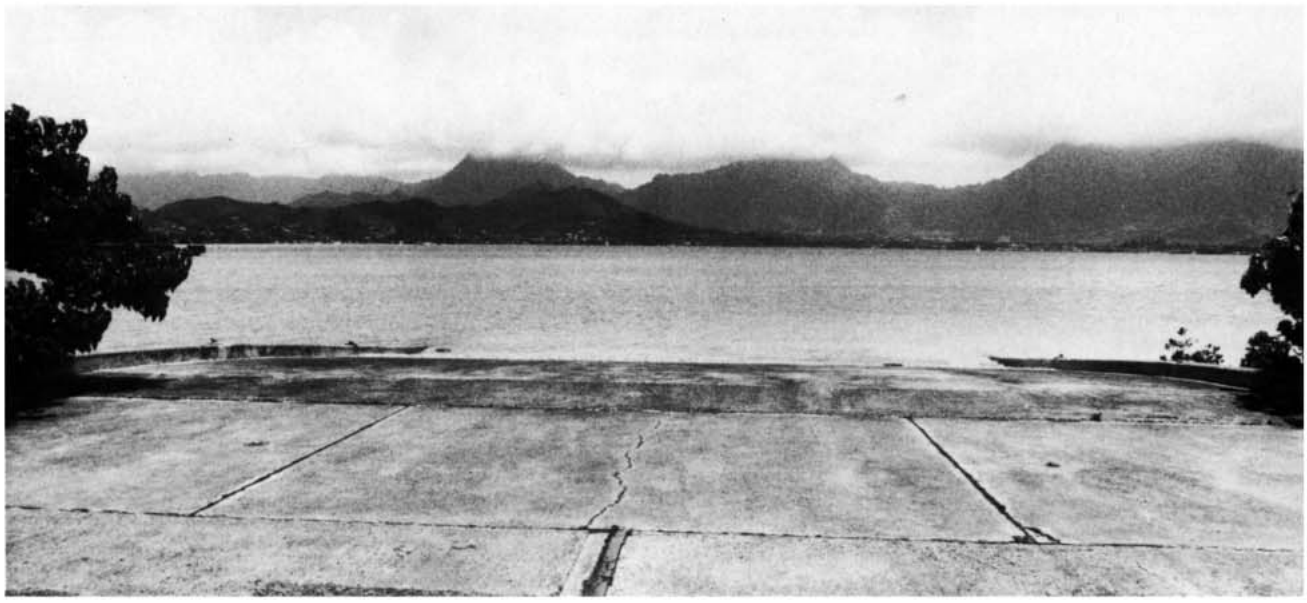
KANEOHE

When the sound of engines disturbed the early morning peace at Kaneohe Naval Air Station it was assumed that the Army were yet again indulging in manoeuvres and little more was thought of it. On closer inspection, men saw Zeros start to take their positions ready to attack and gazed incredulously as they opened up on the Naval Air Station. It was precisely 7.48 a.m. and Kaneohe was under attack seven full minutes before Pearl Harbor was hit. Smoke began to billow from a building before the men began to catch on to the fact that this was no Army manoeuvre. As the Japanese planes screamed overhead, warnings went out to Bellows and Hickam stations although these were at first considered to be practical jokes and in poor taste.

The object of the enemy attack on Kaneohe was its thirty-six PBYs and a few other miscellaneous aircraft. Three of these, the only ones to escape the attack, were out on patrol, leaving the remainder to face the full force of the bombardment. The aircraft were mostly parked on the PBY ramp, except four which were at anchor in the bay a thousand yards apart and another four which were in Hangar 1. The Zeros, followed soon after by dive-bombers, plowed straight into them, their fire-power augmented by nine high-level

IN MEMORY OF THOSE GALLANT
AMERICANS WHO DEFENDED THIS
AIR STATION AGAINST ENEMY ATTACK
DECEMBER 7, 1941
DEDICATED JULY 4, 1970
BY THE STAFF AND WIVES CLUB
IN COMMEMORATION OF THE 50TH ANNIVERSARY

Below: **Kaneohe lies on the Mokapu Peninsula on the eastern coast of Oahu and is now a Marine Corps base.** *Above:* **One of Kaneohe's several memorials to December 7 — this one mounted on lava rock stands at the main gate.**



The front of Hangar 1 by First Street — forty years later still in use for car parking and, although the hangar has been refurbished, some bullet marks still remain.

bombers. This was more than enough to flatten the base and put it out of action for the remainder of the attack.

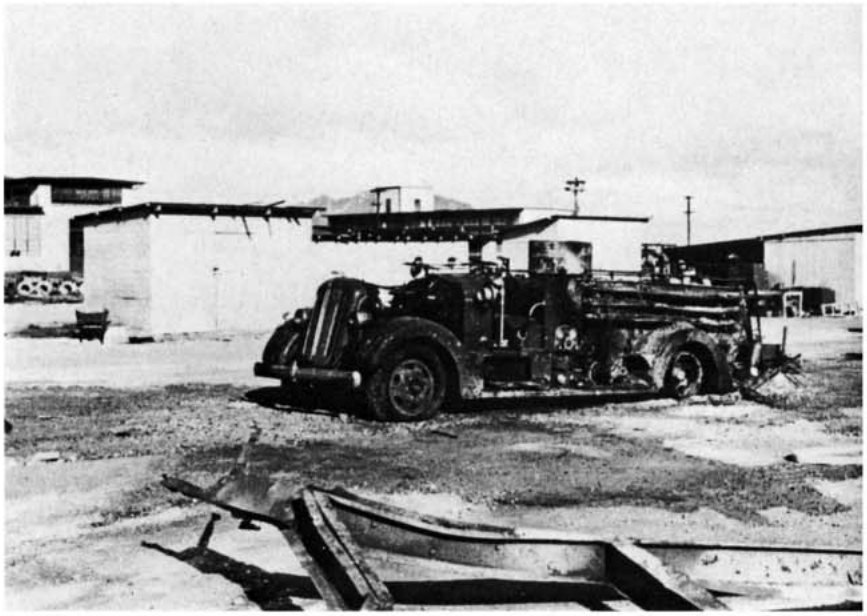
The Japanese were led by the quiet but completely fanatical and devoted Lieutenant Fusata Iida, who made it clear what he would do if his aircraft developed engine trouble after taking off from the *Soryu*: 'I will fly straight to my objective and make a crash dive into an enemy target rather than make an emergency landing'.

The southern side of the hangars and the south-east corner of Hangar 1 were completely plastered. In what was roughly calculated as little more than eight minutes, attacking aircraft generally caused havoc and shot up any promising targets they could find in the station — buildings, individuals, motor cars, even firemen as they fought the voracious flames leaping in and around the squadron planes on the ramp. They even riddled a number of small boats servicing the planes at anchor and one man had to swim all the way across Kaneohe Bay to reach safety.

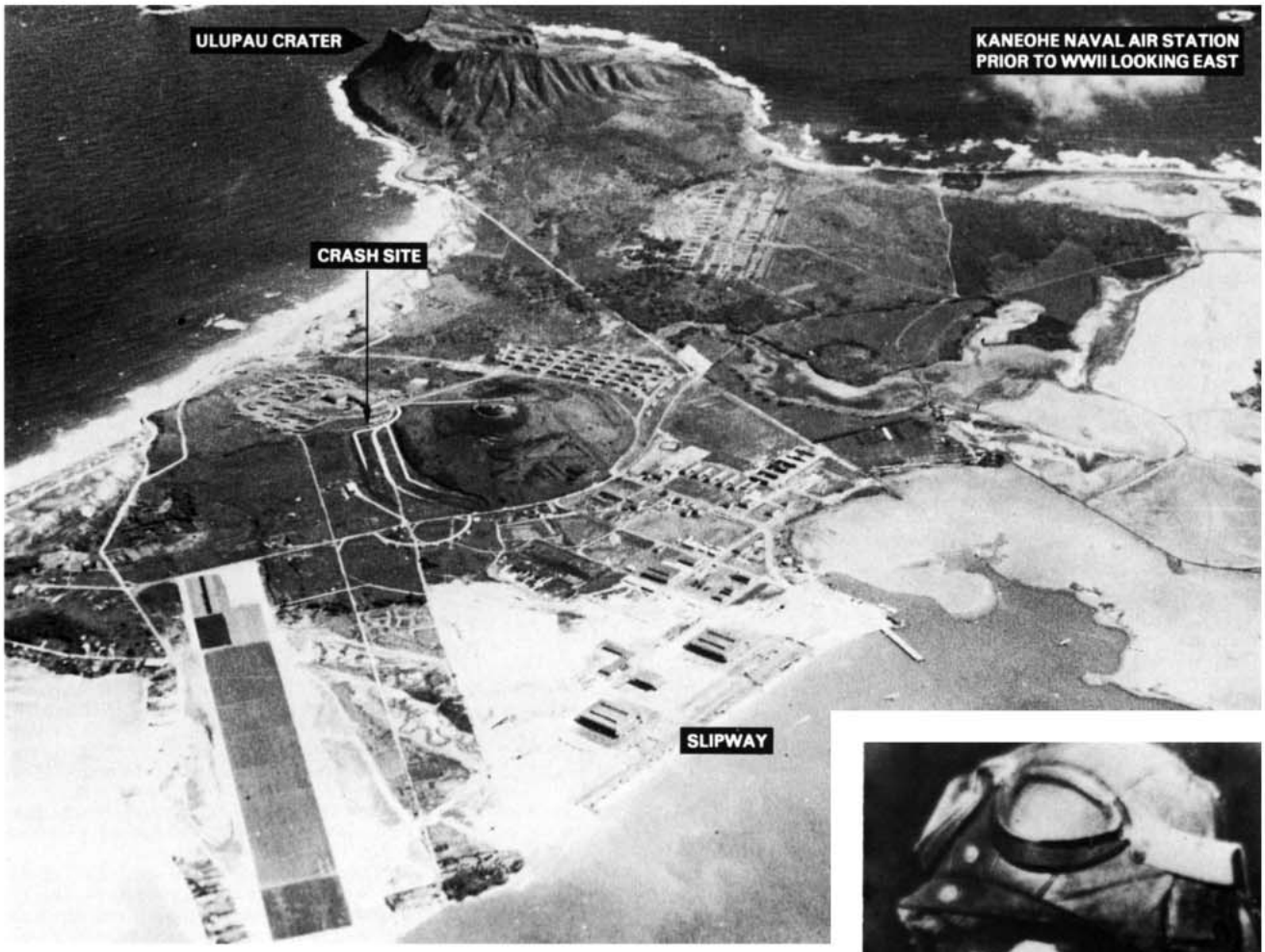
At least one man was ready and able to fight back. Chief Aviation Ordnanceman John Finn was lying in bed just before 8.00 a.m. when he heard gunfire. He leaped out of bed and outside to his 1938 Ford. Once he reached the area where the PBYs were parked he stopped, jumped out and ran inside one of the hangars. With bullets flying all around him, he set up a .50-calibre machine gun in an exposed position and started firing back. His Medal of Honor citation tells the rest: 'Although painfully wounded many times, he continued to man his gun and to return the enemy's fire vigorously and with telling effect throughout the enemy strafing and bombing attacks and with complete disregard for his own personal safety.'

While Finn made a hero of himself, pilots and flight crews fought as hard as possible to try and save what they could from the hell around them. One plane not yet on fire was spotted by Ensign C. S. Malwein who grabbed a tractor and with the help of two men tried to pull it to safety. Then, just when they thought they had succeeded, a Japanese plane dived out of nowhere and reduced the plane to a mass of flame.

The Japanese were being faced with more and more resistance as they came in on repeated attacks. Finn was still pumping away with his .50-calibre and others fired off rifles or machine guns mounted wherever they could, or with whatever else could be found. Here, as elsewhere on the island, anger and dismay forced men to determine to do



Left: **This sorry-looking wreck was once one of Kaneohe's fire engines.** *Above:* **Although some of the buildings have been demolished, the original base fire station still stands.**



Left: **The first of the many — Lieutenant Fusata Iida. This marker *(below)* has been erected at the crash site beside Reed Road. The plaque simply states: 'Japanese Aircraft Impact Site, Pilot — Lieutenant Iida, I. J. N. Cmdr. Third Air Control Group. Dec. 7, 1941'. His former fiance visited the spot on the 40th anniversary of the attack in December 1981.**

whatever they could to hit back. And it was not without some effect either.

Iida had returned from a short excursion to Bellows airfield and was busy peppering the station armoury when a sailor named Sands, who had barely escaped being strafed, returned fire with his Browning Automatic Rifle, and suddenly the Japanese plane broke off the duel. Whilst Sands loosed off another magazine, Finn also had him in his sights as did scores of other men throughout the station, all hungry for a kill. Inevitably, in the face of this fire, the Japanese could not remain unscathed forever, and petrol began to pour from a bullet hole just as Iida was about to join his men making off for the mountain gap and away. Knowing he could not make it back, Iida, true to his pledge, turned round towards the heart of Kaneohe. As he went down more guns fired at him, and men stared as the plane was seen to deliberately crash into a road winding up a flat-topped hill and strike the pavement about five feet below one of the married officers' quarters. It skidded across and piled up against the embankment at the opposite side, completely disintegrating. Iida died instantly, Japan's first suicide pilot and the Americans' first 'kill'.

Iida was not the only Japanese loss that day at Kaneohe as one other pilot was shot down, ending up in the bottom of Kailua Bay. Nevertheless, for the Japanese, the losses were more than worth it — of the thirty-three PBYs at Kaneohe, twenty-seven were completely destroyed and six damaged. Fifteen military and two civilians were killed in the attack and sixty-seven wounded. The fire in Hangar One continued to burn until well into dark.

At 4.00 p.m. the following day, the dead were buried with full military honours in a temporary unidentified grave in the sand dunes off from the station proper. Lieutenant Iida was buried nearby.

US Army photograph showing the rear of No. 11 Hangar at Hickam. Note the photographer in the solar topee carrying a Graflex plate camera with flash gun.

HICKAM

Hickam airfield was named after Horace Meek Hickam, a distinguished US pilot killed in an aircraft accident at Fort Crockett, Texas in November 1934. In that year the Army Air Corps began construction of the airfield on 2,400 acres of rough brush and sugar-cane fields at a cost of £15 million and three years later the first personnel moved in.

On May 13, 1941, twenty-one B-17 bombers arrived at Hickam from Hamilton Field, California, and by December 7 Hickam could claim six serviceable B-17s, plus twelve A-20s of which half could fly, and thirty-three B-18s of which seventeen were airworthy. Another twelve B-17s were expected to arrive that very morning from the mainland — the aircraft wrongly identified on the radar screen at Opana. All the aircraft at Hickam, as at the other bases, were parked together according to General Walter Short's orders. He decided this was the best way to prevent sabotage, as he considered this the greater threat — not aerial attack. If they were all grouped in one place, he reasoned, it would be easier to protect and guard them.

Hickam was basking in the same early morning peace and quiet as neighbouring Pearl Harbor until 7.55 a.m., when aircraft were spotted approaching from the north-west. Again, no-one took too much notice of them and some assumed they were Marine planes from Ewa. Then more planes — bombers — were sighted coming in from the south and, in unison with those coming in from over Ford Island, began strafing and bombing the sleepy airfield.

One by one the hangars, station buildings, and anything else in the enemy's sights, shattered and disintegrated as bullets and bombs tore into everything. One of the first buildings to be hit was the three-thousand-man consolidated barracks, Hale Makai. Here men were just queueing up for breakfast or beginning to dig into it, when they suddenly found bullets pinging about their ears. Within a matter of minutes thirty-five men were dead and many others wounded. Those men still asleep — if they could possibly still be after that — were given a rude awakening as more bullets smacked into their barrack rooms.

Other attacking aircraft chose to concentrate on the hangars, blasting and demolishing everything in their path. Within

Forty-one years later the same hangar was being used for storage.

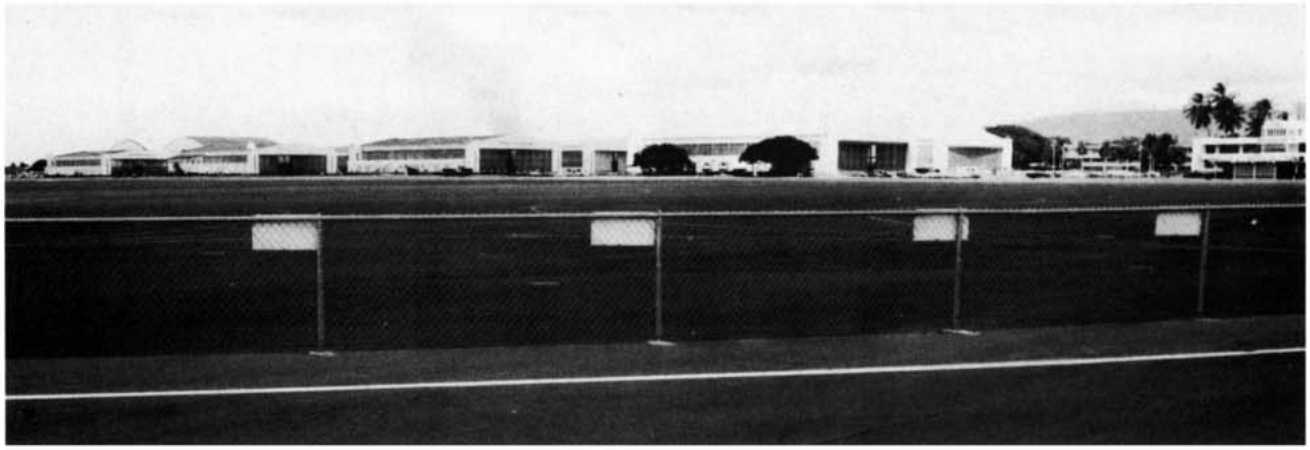
A shattered B-17, that caught fire in the air and broke apart on landing, in front of Hangar No. 5 — and that hat again! It possibly belonged to Tai Sing Loo, one of the official military photographers at the time (US Army).

minutes, they had reduced parts of the base into a smoking mass of confusion. Wrecked planes littered the flight line and more aircraft burst into flame with every bullet.

As the attack developed, the flight of B-17s approached completely unaware of the scene of carnage they were about to enter. The pilots and crews viewed with some awe the smoke from Pearl Harbor filling the air. Then as they neared the airfield they saw the full implications of the events taking place. With swarms of Japanese planes buzzing about their ears the lead planes radioed for landing instructions and the tower calmly replied. One by one the B-17s cautiously came down to land, Japanese planes harassing them all the time. Each one shuddered to a hasty stop, the crews wasting little time in scrambling from the aircraft to search for any sort of cover. Some men were less fortunate than others — the enemy fighters cutting men down if they proved too slow at sprinting. Men made for anything resembling cover — swamp, ditches, keawa bushes. Other B-17s decided it was too risky to try landing at Hickam and gave it up as a bad job. They pulled away and made for Wheeler, Bellows or any other place on the island which would take them in.

The B-17 saga ended at around 8.20 a.m. but there was plenty more going on elsewhere on the airfield. Buildings blazed everywhere as Japanese sorties intensified. The base fire station was stretched to the limit as calls rang in from every corner. Even then efforts were hampered by burst water mains and being under constant attack. Then the station itself was blasted. A sudden, shattering explosion rocked the building violently, sending debris showering down and reducing a fire engine to ruins. Despite this the firemen fought well and

Scenes of violence at Hangar Row in 1941 contrasted by the orderly scene forty-one years later. The military airfield has been vastly extended and is linked with the new Honolulu International 'Reef Runway' opened in 1977 on land reclaimed from the lagoon.



Hangars 7 and 11 survived a very near miss when this bomb blasted a crater between the two. The recently-restored hangar now shows no sign of the damage (US Army).

defiantly, especially under the leadership of Fire Chief Benedict, who suffered three bad wounds during the attack.

On the ground, there was next to nothing to fight back with and the Japanese were able to attack with virtual impunity. As the men raced about without direction or co-ordination, the strafing aircraft cut them down at will. A group of men was picked off by two aircraft whilst another got a third man who for some reason sought cover up a telegraph pole. He was lucky to have escaped with his life — so perhaps to an extent he was right about the pole!

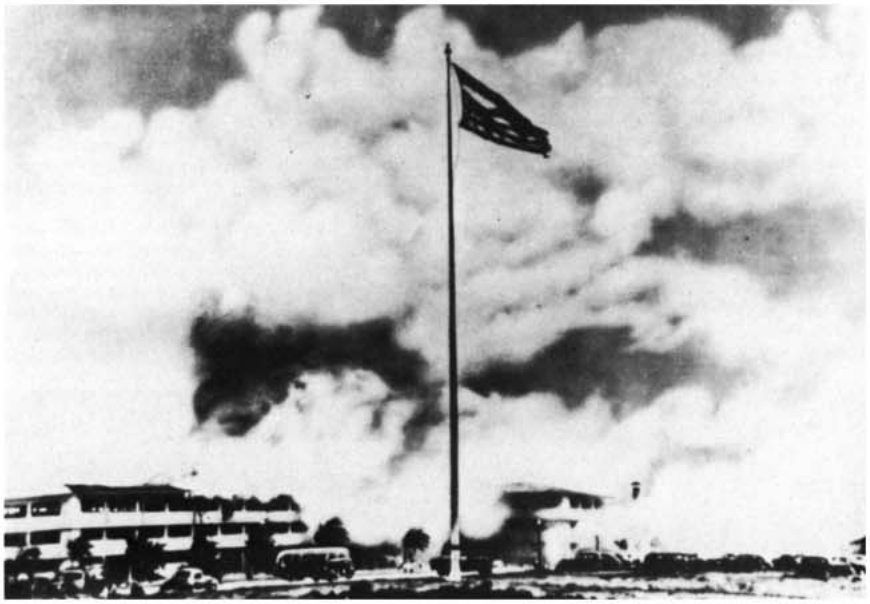
B-17s adjacent to Hangar Row were torn apart. One plane in particular near Hangar 5 had its rear fuselage torn completely off whilst others all over the field were holed by machine gun fire and rendered useless. One bomb blew a huge crater between Hangars 7 and 11, sending showers of glass whistling through the air from the giant doors, the roof of the latter also being torn off by the blast.

More strafing attacks elsewhere on the base created additional chaos. A Japanese plane flew low over Sixth Avenue between Worthington and Singor Streets and created a messy scene after bursting a water main and sending a lorry over on its side. Debris was scattered all over the place.

However, the attackers did not have it all their own way, and one pilot, entirely through his own misjudgment, let his aircraft touch the tarmac of the parking ramp. According to eyewitnesses, the unlucky Japanese ended up crashing either into the hillside or the sea.

Then at around 9.00 a.m., almost as soon as these attacks started to wane, reports were received of high-level bombers approaching the airfield. Coming in from the south in the direction of Fort Kamehameha, their positions were clearly indicated by the anti-aircraft fire which accompanied them. Bombs soon began to plummet earthwards creating gaping wounds in the runway area and sending more shrapnel and lethal fragments in all directions. Hangar 15 was hit where a B-18 was undergoing repair and the same fate

American casualties lie in the shade of the base fire station — victims of Japanese strafing aircraft. The handrail of the staircase still bears bullet marks (US Army).



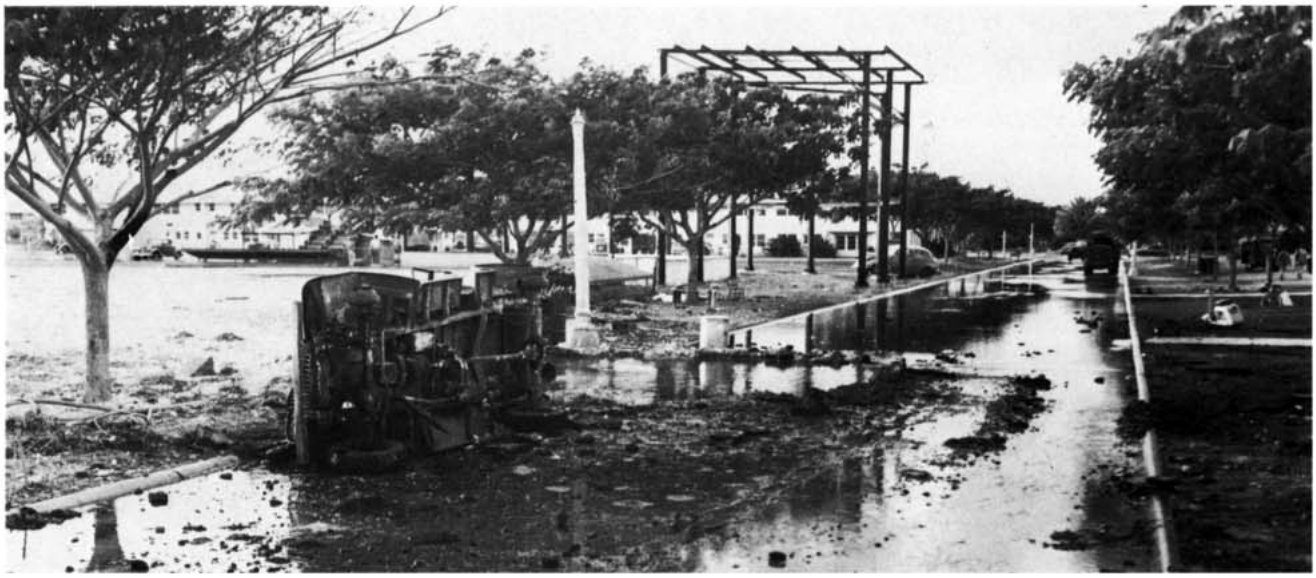
Above: **The smouldering Hale Makai barracks at Hickam were covered in strafing marks which are clearly visible today on the PACAF Building** *(opposite)* **as it is now known (US Army).**

One of the most famous photographs of Pearl Harbor: the Stars and Stripes over Hale Makai, where the same flag is preserved today.

befell Hangar 13, into which numerous bombs crashed, reducing it into a twisted ruin.

Whilst Hickam reeled from the shock of this carnage, the dive-bombers returned at 9.15 a.m. This time men grabbed any type of weapon they could: the .30-calibre machine guns in the nose turrets of B-18s, rifles, .45 pistols — anything was better than nothing. Some of the more effective firepower came from inmates of the guardhouse who were released when the building sustained a direct hit wherupon they immediately rushed to the aid of a lone sergeant who was attempting to man a machine gun.

Throughout the base the Japanese spread destruction and death, whilst the men on the ground searched for shelter. Fifteen cooks in the mess hall sought refuge in the cold store.

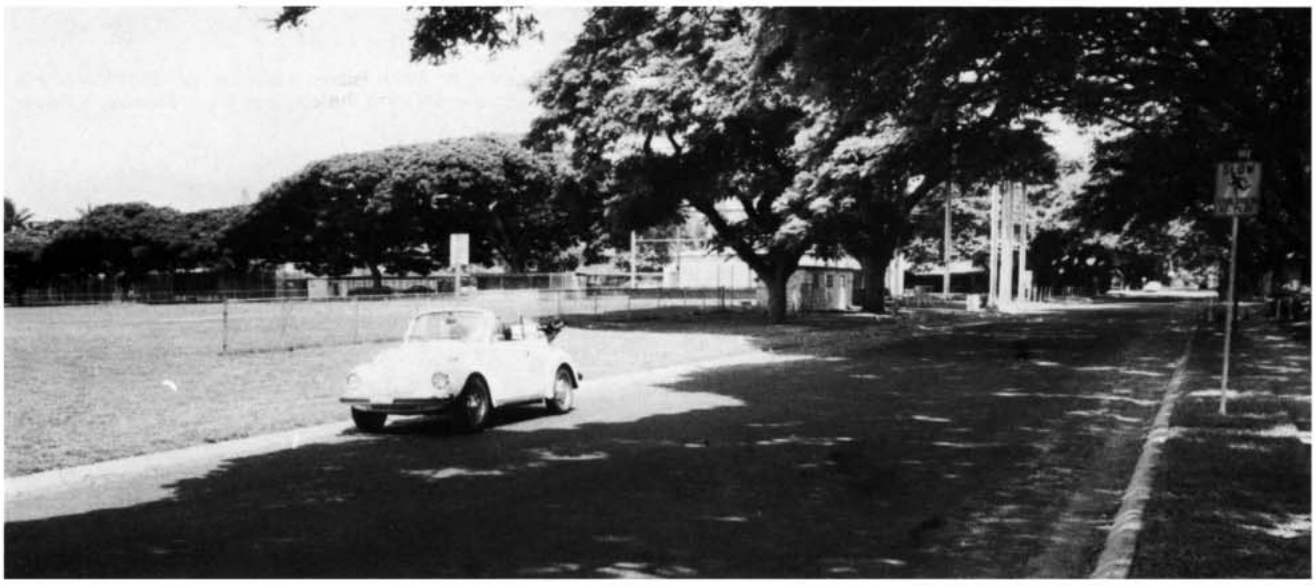


The path of destruction on 6th Avenue. Andrew Hyde's guide at Hickam, Dennis Fujii used his car as a stand in but Andrew comments

It might have been strong enough to withstand blast, and it did, but the cooks must have forgotten about the effects of concussion — and it was this that killed them.

Any bombers attempting to take off were dealt with mercilessly. The slightest movement from the Fortresses resulted in them being set upon and transformed into burning hulks. The renewed vigour of the scattered groups on the ground did little to put the enemy off and, throughout the attack, aircraft flew from one end of the field to the other harassing at will. They certainly achieved the main objective of preventing any of Hickam's aircraft from getting off the ground to interfere with the planes.

By the time they finally left, 121 men were dead, 274 wounded and thirty-seven missing.



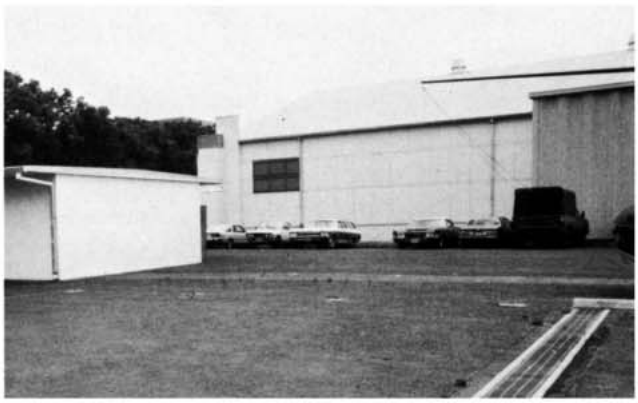
that unfortunately he would not allow it to be placed in exactly the same attitude!

WHEELER

Major Sheldon H. Wheeler, formerly commander of Luke Field on Ford Island who was killed there on July 12, 1921, gave his name to the airfield which, on the morning of December 7, contained fifty-two of the Army's new P-40 fighter planes, and thirty-nine P-36s, lined up as usual in neat rows as an anti-sabotage measure. Their ammunition was stored in the hangars.

This small base lay asleep until about a dozen aircraft were sighted flying through Kolekole Pass to the west. These then banked to the left and circled, before being joined by another group flying in from the north-west. At 8.02 a.m. they started their run in, opening up on the ranks of P-40s. The attacking aircraft knew exactly what to do and where to hit — dropping their bomb loads before turning to let loose with machine guns. The hangars and the parked aircraft were completely defenceless and one by one the planes burst into flames, each inferno setting alight the next and so on until whole rows lay drenched in flames. Shaken into sudden consciousness, men leapt from their beds or deserted their breakfasts. Outside, men

Wheeler airfield lies almost in the centre of Oahu Island, close by the 25th Division's Schofield Barracks. Hangar 4 miraculously escaped the carnage on the apron — this is the remains of a P-40 (US Army).



Left and above: **The wrecked Hangar No. 3 with the barracks on the left where many men were killed (US Army).**

Above: **Still-smoking wreckage is bulldozed into piles as a prelude to the massive clear-up operation (US Army).** *Below:* **Forty years later modern tyre tracks lead past the site of the scrap heap to the post-war control tower.**

scattered for cover as bullets whizzed passed their ears and pursued them as they ran. Men rushed to try and drag undamaged planes to safety, braving the strafing and the bombing in a futile attempt to leave something salvageable. Many of the planes did not even have any tyres, and this added to the difficulty of moving them. Before long the scene in front of the hangars was one of blazing machines and disintegrating skeletons. For the hangars themselves it was little better.

The machine shop in Santos Dumont Avenue, in the south-west corner of the field, set rather back from the flight line, was raked by machine gun fire which blew out most of its windows and sent glass flying in all directions.

Hangar 3 took a severe pasting from nearly every conceivable direction, its windows on each side smashed and blasted out, much of the corrugated iron roof wrenched off and reduced to a hopelessly deformed mass by the force of the blasts. The whole south-west side was blown out and chunks of debris sent sprawling everywhere.

In strange contrast, Hangar 4 escaped almost unscathed, though all around it the scene was one of utter chaos. Scores of ruined planes, men, fire, and smoke — all combining to present a scene as unforgettable as were those taking place elsewhere throughout the island.

In the midst of this pandemonium, or, more to the point, because of it, Lieutenants George S. Welch and Ken Taylor were making hasty plans to depart. They had spent the night as guests at Wheeler Officer's Club and had only just finished their all-night poker game when the firing was heard. They immediately caught on to what was happening and Welch grabbed the nearest phone and called Haleiwa where both they and their aircraft were based. Giving instructions to load and refuel the aircraft, he then joined Taylor as he revved up his car. Then they screeched off to Haleiwa with a Japanese plane strafing them as they went. At the airfield, their P-40s were waiting, fuelled and armed. The engines roared into life and they took off without further ado to become the Japanese' only accountable resistance in the air.

Meanwhile, back at Wheeler, the enemy had practically finished off the base. The hangars burned furiously, aircraft lay scattered everywhere, blazing and disgorging choking smoke and, in addition, the post exchange had been demolished. The enlisted men's barracks had also suffered its fair share of punishment. Several men died here, plus many more wounded.

After having been ordered to patrol round Barber's Point, where they found no Japanese, Welch and Taylor returned to Wheeler to get some more ammunition. Here they came across some rather recalcitrant ground crew who wanted to disperse the planes whilst the pilots understandably wanted to get straight back into the fight. Welch and Taylor finally brought the ground crew around to their way of thinking and they agreed to load up the planes, which were ready for the next wave of Japanese aircraft at 9.00 a.m. The ground crew dashed from the area to find some cover, while the pilots took off again double-quick to avoid being caught on the ground.

This attack was led by a Lieutenant Fujita, who had reformed the group which had just attacked Kaneohe. An American plane, a P-36 or a P-40, charged at him but he managed to avoid it and open up on another. Anti-aircraft fire joined in now, too, and, with some more American planes entering the fight, a number of dogfights began to develop all over the place. The Americans, though, were no match for the far superior Japanese planes and suffered heavy punishment. Taylor and Welch claimed at least two kills. Fujita at this point, in spite of the odds, ordered his men to withdraw. They were due to attack Haleiwa but it seems they were so impressed by the resistance that the Americans were now putting up that they decided to cut their losses and run.

Welch and Taylor had already decided to make for Ewa. Here dive-bombers were busy at work of which they downed four, though Taylor suffered a wounded arm and landed. Welch stayed in the air and sent another Japanese plane down, eventually accounting for seven altogether.

He could not stop, however, the twenty-one planes which set upon Ewa inflicting serious damage. By 8.05 a.m. thirty-three of the forty-nine aircraft at the base were write-offs, and it was only the bravery of the men on the ground that prevented even worse results. One Japanese pilot, Lieutenant Yoshio Shiga, remembered being confronted by a Marine who fired back at him with a pistol.

Back at Wheeler it was all over as swiftly as it began. One moment the Japanese attackers were there, cutting the base to pieces, and then the next they were gone — leaving thirty-seven dead and fifty-three wounded, plus six quoted as missing.

The B-17 of Lieutenant Robert Richards which succeeded in making a forced-landing at Bellows while under attack (US Army).

BELLOWS

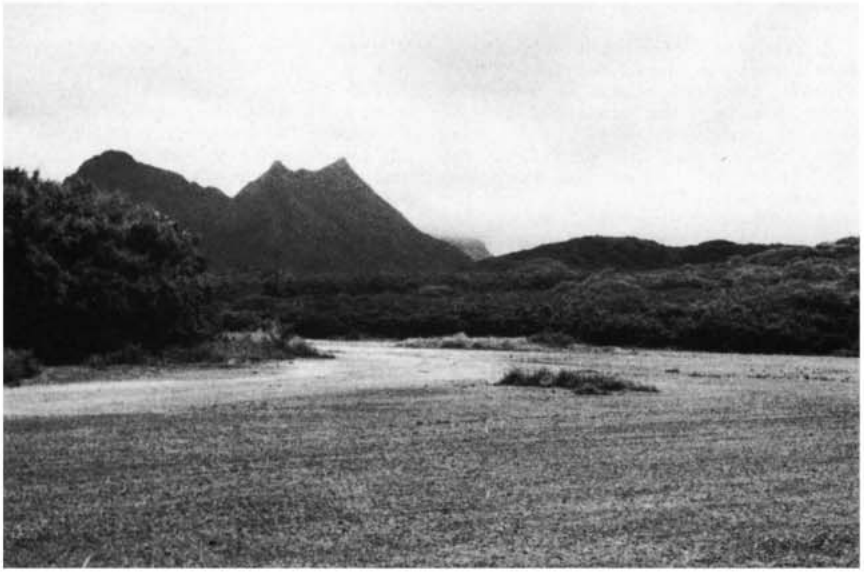
The base itself was actually established in 1917 as the Waimanalo Military Reservation and became known as Bellows in 1933, after Franklin B. Bellows who was killed in action on September 13, 1918, during a reconnaissance flight near St. Michel in France. During the 1930s it was used as a bombing and gunnery range by aircraft from Hickam, Luke and Wheeler fields, and just before World War II fighters were dispersed from Wheeler to Bellows and other small aerodromes on Oahu.

On the day of the attack there were twenty fighter planes based there, only twelve of which were modern P-40s. Again they were neatly lined up as at all the other airfields almost inviting the Japanese to fly along and set about them. This quiet base on the north-east coast of Oahu, right next to a beautiful sandy and serene beach, was just as unprepared and most plans must have been geared to a morning dip before breakfast. But all were cancelled when at approximately 8.30 a.m. a lone Japanese plane was observed by Private Ray McBriarty, an AA gunner and armourer. He thought it was an AT-6 trainer and continued on his way to church, but it fired a short burst at the camp tent area and hit a medical orderly. Immediately an orderly drove off to inform the commander, Major L. D. Waddington who was billetted about a mile from the base. He immediately ordered the planes dispersed.

Then, at 9.00 a.m., Lieut. Shigematsu approached leading nine planes in a V-formation just as everyone's attention was being directed to a B-17 coming in to land on the 2,600-foot runway. It was one of those which had been caught by the Japanese as it arrived at Hickam and Lieutenant Robert Richards decided, like many other of the B-17 pilots, to head for an alternative landing site. Bellows was suggested by the men manning Hickam tower and he reached the airfield just in time. He was almost out of fuel but he succeeded in making a flawless landing with three men wounded aboard and nine Japanese planes strafing him all the time.

While men watched the drama taking place on the airstrip with some curiosity, Hickam found time at last to advise Bellows that they were indeed under attack. The warning was just in time — or just too late — as everything happened at once. Japanese planes diving out of the sky dazed and horrified men diving for shelter as bullets whizzed and richochetted in all directions. The pilots did the only thing they could do — they got into the air and fought back. The attackers, on the other

With the peaks of the Koolau mountains shrouded in cloud, the featureless landscape makes a meaningful comparison difficult. Bellows, situated eight miles south of Kaneohe, is no longer in use for regular flying although the E-W runway is possibly to be re-opened for light civilian aircraft.



Above: **Many aircraft were wrecked before they could get off the ground like this P-40 (US Army).** *Right:* **Olomana Peak gives the clue as to the location.**

hand, were equally as determined to stop them. Lieutenant George Whiteman took up the first P-40 but was cut to pieces before he knew what had happened. Then half-a-dozen Zeros turned their attention to Lieutenant Hans Christenson who was not even given the chance to lift off the ground. Lieutenant Bishop was next — machine gunned out of the sky seconds after take-off. Fortunately, he had the presence of mind to crash-land into the nearby sea and was able to swim to safety — the one person at least at Bellows who got his morning dip.

Eventually a very small number of US planes managed to get airborne, in spite of the enemy's attempt to force them to do otherwise, but they could have little influence on the outcome. The Japanese also damaged one 0-49 and 0-47 and set fire to a petrol tanker. On top of the material and structural damage, Japanese strafing killed five and wounded nine American personnel at Bellows.

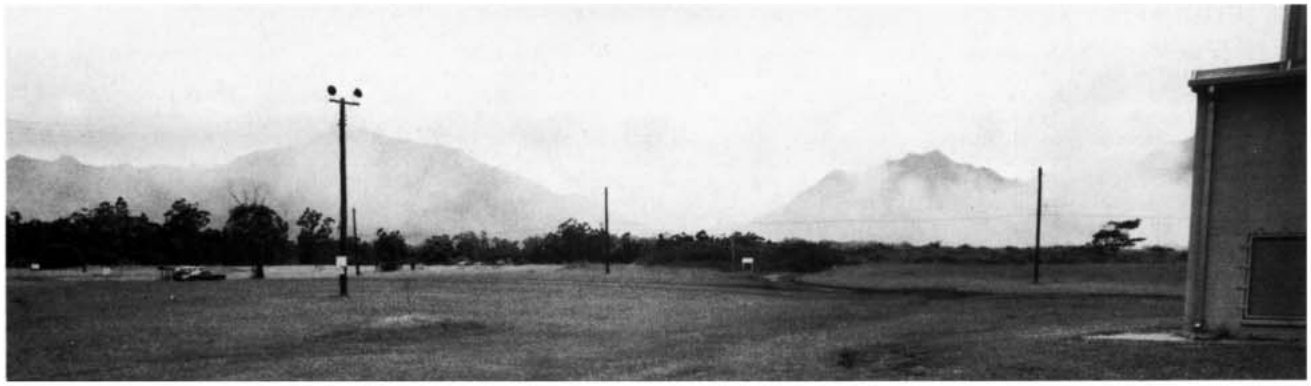
SCHOFIELD

The barracks were built in 1909 on the Leiluhua Plain in central Oahu to provide a base for the Army's mobile defence of the island. The 5th Cavalry was assigned to Schofield when the post first opened, and they were followed soon afterwards by part of the 2nd Infantry Regiment and the 1st Field Artillery Regiment. A network of roads and a narrow-gauge railway which ran from Wahiawa and eventually connected to Honolulu made it possible in theory for troops at the barracks to move quickly to defend any threatened point on Oahu.

Major General Short, during his term in command of the Army on Oahu, organised and perfected a plan of defence for the islands against invasion. If the Japanese had attempted to seize the island, then they would have come up against stiff and determined opposition. The 24th Infantry Division, and the newly-formed 25th, would have given a good account of themselves given the chance to do so. As it turned out, their entry into the war was very inauspicious indeed.

Troops at Schofield were sleeping off heavy hangovers following a typical Saturday night relaxing after the rigours of the week, training and practising for the invasion that never came. The five large quadrangles were very quiet, with a few men wandering about in groups or alone when a single plane dived over the quarters of the divisional commander — Major General Maxwell Murphy. He grabbed the pen nearest to him, determined to report what he thought must be a fancy young pilot beating up the base. It flew out of view so he ran to the front door just in time to see a bomb spiral earthwards from the plane. The explosion shook men from their slumber and made others look sharply up from their breakfasts. More planes followed soon afterwards — diving at the barracks through Kolekole Pass, heading for the quadrangles and spraying them with machine gun fire.

The 'back door' to Schofield — Kolekole Pass — the perfect approach for a surprise attack on the barracks.



Looking into one of the quads, virtually unchanged with the passing of the years, and which now serve the men of the 25th 'Tropic Lightning' Division. After Pearl Harbor, its sister division on Oahu, the 24th Infantry, went on to fight the Japanese in thirteen separate campaigns — as one unit history records: 'The 24th Division doesn't forget.'

Circled bullet holes in the wall of the Schofield camp library are retained as a graphic reminder of the past.

Buglers blasted their instruments and this brought men out from wherever they were — clutching rifles and helmets — thundering down the steps to the parade ground in the hope of receiving some instructions. One bugler could not play 'Call-to-Arms', but 'Pay Call' proved to be an excellent alternative. Ammunition and BARs were shared out and men let off round after round at the wheeling Japanese planes, but at this critical time it was found that much of the ammunition was useless — old 1918 issue which proved more dangerous to the shooter than to the target.

It was just as well really that the Japanese had no prolonged attack planned for Schofield — they were satisfied merely to cause havoc and panic in the barracks and try to content themselves with generally making life miserable for the soldiers below. Confusion reigned as units struggled to get to their assigned positions ready to confront the expected invasion. Guns intended for Wheeler, however, could not get there as no lorries were available until after the raid.

That was it for Schofield; a short sharp attack which woke more men of the US Armed Forces from peace to war. There was no real threat to the attack from ground forces, so the men of the 24th Infantry Division were left to get ready to leave for the beaches and fight off the invasion that never came. The one thing Short had planned for meticulously never materialised; that which he could not conceive resulted afterwards in his dismissal.

The memorial, in Beretania Street, Honolulu, records the names of all those Americans of Hawaii killed in the Second World War — 1941-1945.

AFTERMATH

Leaving the island of Oahu a shambles, the Japanese left their target as secretly as they arrived. Flying south and then turning sharply to backtrack northwards, they maintained the illusion that the entire assault had indeed been launched from the south. Fuchida remained for an hour or so to assess the damage before he too, made his way back to the carriers, picking up two stragglers on the way. Nagumo, in order to help his pilots out, closed his carriers to within 190 miles of Oahu, too close for comfort, but his men needed all the help they could get.

A total of 324 planes returned but, with such a great deal left to do, Fuchida wanted to lead another strike. The enemy were helpless. One more assault would certainly finish them off and perhaps seek out the carriers and destroy them too. But Admiral Nagumo was adamant that there was no need to push their luck any further. He was satisfied that he had achieved everything he had been ordered to do and he gave the order to withdraw. The mighty fleet began to turn for home at 1.00 p.m.

For the loss of twenty-nine planes and fifty-five men, the Japanese had achieved a victory unparalleled in history and it seemed that nothing could now stand in their way. Their divine destiny would be fulfilled and no-one was going to stop them. Pearl Harbor, Hickam, Bellows, Wheeler, Kaneohe and little Ewa; all were out of commission, at least for the time being.

Even Honolulu City itself was not spared — but it was the defenders and not the attackers who did the damage. As well as having to send men to fight the fires in Pearl Harbor, the Fire Department received reports of a building supply depot being hit and losing thousands of dollars worth of goods. A woman was killed in Upper Nuuanu Valley; the roof of Lunolilo School was set on fire; Nuuanu and Kukui Streets were hit as were King and McCully Streets. Numerous areas shuddered under the weight of what was assumed to be Japanese bombs, and it still takes a lot of convincing to make a surviving resident believe it was

Above: **Too late these improvised gun pits were set up beside Ford Island air station — ready for the follow up attack which never came (National Archives).** *Below:* **Today this corner of the island is silent; the foreshore deserted and the hangar on the right disused.**

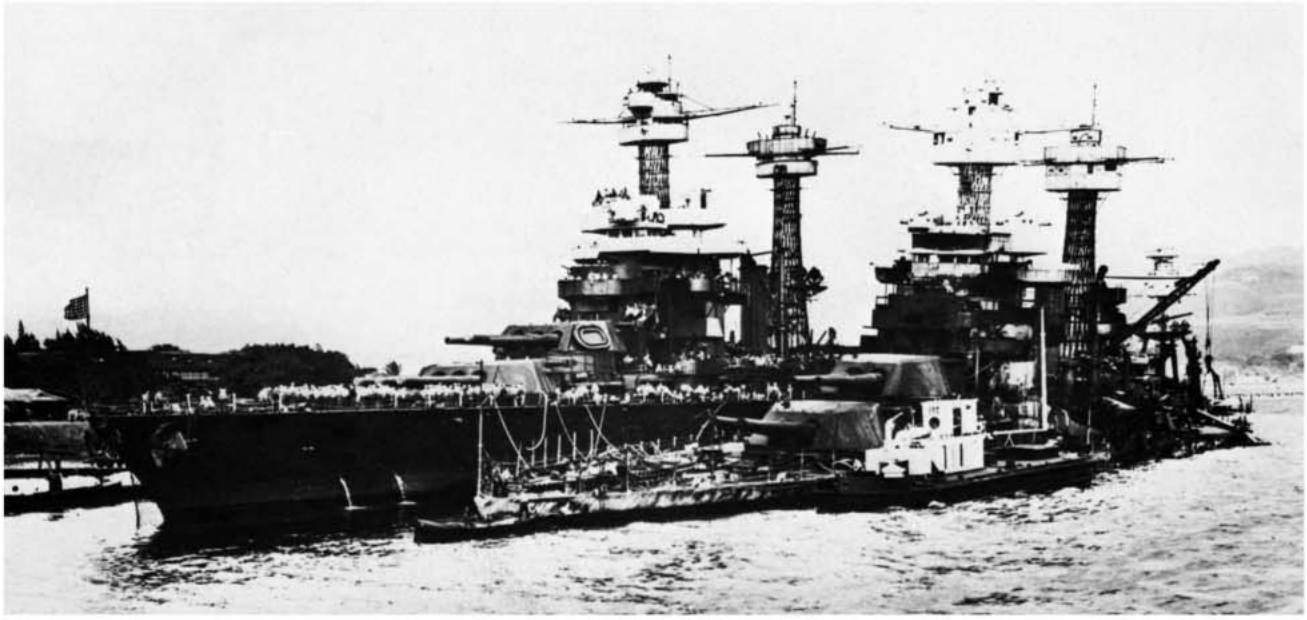
American shells from the ships in the harbour which were to blame and not the enemy. In their hurry to get into action, the gun crews rarely bothered to set the fuses on their shells, and many of those fired were delayed-action or impact shells. They had to land somewhere and that somewhere was the area around the harbour.

Once the enemy withdrew, everyone prepared for the invasion they all thought was bound to follow. All units were assigned beach-head positions, and barricades were established at strategic locations. The alertness and preparedness which could have provided a reception for the Japanese at 7.55 a.m. was being brought to life now it was too late. The island waited and waited, yet nothing happened. Nervous sentries shot at anything that moved, and every sound was a Japanese landing craft coming in to land. Even friendly US planes were shot down by mistake when the flight was believed to be a renewed assault. They were in fact planes from the carrier *Enterprise* heading for Ford Island. After that it was decided the best thing to do was to land as enemy planes and, when they attempted it, showing no lights and coming in low, they suffered no losses.

Meanwhile, martial law was declared by Governor Poindexter, which was to remain in force for the remainder of the war. As a result, thousands of Japanese residents were interned. The following day, President Roosevelt addressed the joint session of Congress, and in a moving speech declared that a state of war existed between the United States of America and the Empire of Japan.

Roosevelt wasted little time in sacking Admiral Kimmel and General Short for what was considered gross neglect of duty. The whole blame was laid squarely on their shoulders. A series of reports and enquiries also followed, but the truth of exactly why all the warnings and indications of obvious Japanese intentions were ignored was never really conclusively answered.

American casualties were fixed at 2,086 officers and men killed or fatally wounded; 749 wounded men survived. The Army had 215 officers and men killed and fatally wounded, 360 others wounded who survived, and twenty-two missing. The Navy lost ninety-two aircraft, including five of those from *Enterprise* which arrived in time to get mixed up in the fighting. Thirty-one were damaged. The Army lost ninety-six aircraft. Nevertheless, it was the fleet itself which suffered the worst.



SALVAGING THE FLEET

In all, eighteen US ships had been sunk or seriously damaged although the Japanese could have achieved an even greater score had Fuchida's plea to return been granted. If the Japanese had returned, they could have destroyed the tank farms which were to fuel the fleet in later years; they could have knocked out the shipyards and stopped the fleet from being repaired, and of course, they could have sunk more ships, or made sure those they had only damaged would not rise again.

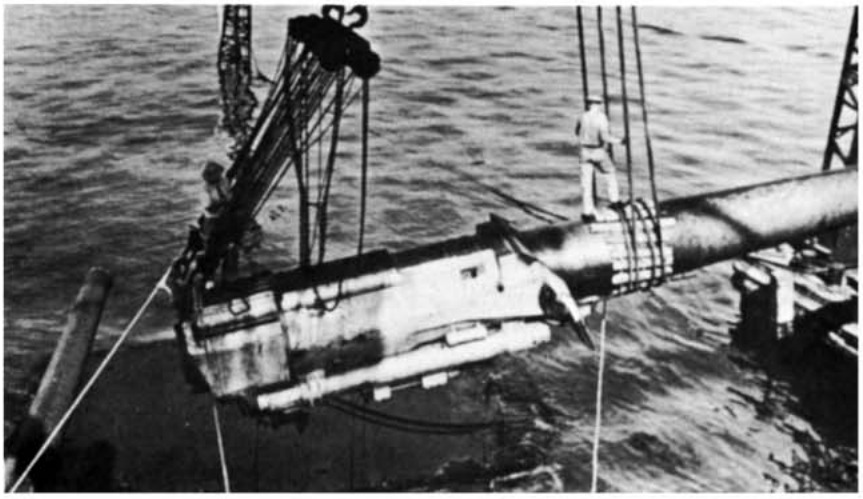
But to the Americans, to lose eight battleships in one fell swoop was more than enough for one day — especially in an era when a country's prestige was counted in the number it possessed. In reality, some of the ships were rather old and slow, and no real match for what the Japanese had at that time, and to some their loss was considered to be something of a blessing in disguise. It later led to substantial improvements in design concepts and armament — and at least being sunk in a home port they were in a place where they could be raised. Their crews were, for the most part, saved and could be retained as the core of a new navy which was at that very moment being built. The ships sunk hardly really constituted the destruction of an entire fleet and, of course, the carriers had got off scot free. Only three of the US Pacific Fleet's heavy cruisers were in Pearl — and none was damaged; three light cruisers out of eighteen in the US fleets were damaged; only three destroyers were lost whereas there were 171 in service. None of the submarines were damaged, of which the US had 112 in service and sixty-five under construction.

Once the full implications had been absorbed, a full survey of the ships lying wrecked in Pearl Harbor was made to see which, if any, could be salvaged and if so, in what order of priority. Obviously, those of most immediate value and use to the fleet would be worked on first to get them straight back into action, the remainder being dealt with as time and resources permitted.

One of the first priorities was the freeing of trapped men in the capsized ships. Thirty-two men crawled dazed and weak from the *Oklahoma* and various other pockets of life were freed from other vessels. Others were left to their fate either because their presence was not known or they died before they could be got to.

Actual salvage operations on the ships started within seven days under the direction of Commander James M. Steele, formerly in command of USS *Utah*. He remained in charge of salvage until relieved by Captain H.

The West Virginia suffered several torpedo hits with at least three below the armour belt and one or two on the belt itself and others entering the ruptures thus created, virtually opening up her whole port side. Two 15-inch shell-type bombs also hit the ship but failed to explode. After huge wooden patches were fabricated and fitted over the holes, underwater concrete was used to temporarily seal the hull which was floated on May 17, 1942. The picture *above* shows the ship just prior to the extraction of the Tennessee which was wedged behind her against the quays.



The California had suffered two torpedo hits at frames 46-50 and 95-100, below the armour belt, and a 200kg bomb had pierced the main deck before exploding on the armoured second deck causing many casualties. After sinking for three days the ship came to rest with a list of 5½ degrees, reduced from sixteen degrees by counter-flooding. At first the experts estimated it would take four years to salvage the ship. As the water level forward reached over Turret IV on the quarterdeck, the first requirement was to lighten the ship. Accessible guns were lifted out and the flag and conning towers cut off together with the mainmast. All safes were removed as were the aircraft catapults, boats, cranes, anchors and chain. The next step was to fix a wooden cofferdam around the flooded deck, plug all openings and pump out the water as well as removing all the fuel oil.

The USS West Virginia showing the distortion in the armoured belt and damage above and below on the port side (looking aft).

N. Wallin on January 9, 1942. Attention was first directed to the USS *Pennsylvania*, launched in 1915, and the least damaged of all. She was patched up quickly, splinter damage repaired, armoury replaced, all in double-quick time and the ship was ready to leave dry dock on December 12, and the Navy dry dock by the 20th. She finally went on to win eight battle stars.

The *Honolulu* had suffered flooding and a six-foot buckle from a near-miss. She followed *Pennsylvania* into dry dock and remained there from December 13 to January 2, 1942, by which time all her repairs had been completed. She, too, went on to win eight battle stars.

Helena was placed in the partly completed Dry Dock No. 2 where temporary repairs were made. She left on December 12 and on January 5, 1942 sailed on half-power for Mare Island Navy Yard where she underwent complete repairs. She was sunk by three torpedoes in July 1943 after taking part in the US victory at Guadalcanal.

Maryland also qualified for the least damaged category but, since no dry dock was available, a small caisson was fitted over the submerged port bow-side hole. Once the water was pumped out, repairs were simple and *Maryland* was fully repaired and ready for action by December 20. She later went on to win a total of seven battle stars.

Tennessee, because she was inboard of *West Virginia*, was wedged hard against the forward quay and the latter had settled and finally sunk to the bottom. Burning oil from the *Arizona* made her condition worse, and she had had to be deliberately flooded to stop her magazines going up. It was decided that only dynamiting could free her and on December 16 this did the job. In the meantime, temporary patches were welded into place. She was then taken to the Navy yard where all interior work was done and she was ready for the trip to Puget Sound by December 20. There she underwent extensive repairs and rejoined the fleet in February 1942 and ended up winning ten battle stars and a Navy unit commendation.

Vestel was repaired by her own crew and was placed in dry dock as soon as one was available in the Navy Yard. Permament repairs were completed by February 18, 1942, and she went on to win two battle stars.

Raleigh was repaired both by her crew and repair ships which involved the removal of all fuel, oil and water. She could not enter dry dock until January 3 where permanent repairs to the hull and bulkheads were finished by February 14. Soon she set sail on one engine for Mare Island where new engine parts were provided and electrical repairs carried out. She rejoined the fleet on July 23, 1942 and went on to win three battle stars in the course of the war.

The new seaplane tender *Curtis*, only launched in 1940, was taken into the Navy Yard twice, and during this time her extensive shrapnel and fragmental damage was repaired, and she finally departed in May 1942. She went on to win seven battle stars.

Left: **Dry dock facilities at Pearl were stretched to maximum to reinstate the damaged ships, bearing in mind provision always had to be made for possible future battle casualties. Dry Dock No. 2 was still unfinished at the time of the attack but within three days, when this aerial was taken, bilge blocks had been obtained from the Navy Yard to enable the Pacific Bridge Company to work on the Helena. Temporary repairs enabled her to leave the dock on December 21 and to sail to the mainland fifteen days later. Note also the Shaw with her bow blown off in the sunken floating dock on the left and the Cassin, Downes and Pennsylvania in Dry Dock No. 1 on the right (National Archives).** *Right:* **Forty years later — still the mainstay of the US Pacific Fleet Navy Yard.**

Helm was taken into dry dock on January 15, 1942, where permanent repairs were made to the steel plating, forward structure, gun directors and electrics. The ship was under way five days later. She won eleven battle stars.

Once the 'easy' ships had been dealt with, there remained the terrific problem of what to do with those which had been so severely damaged or sunk as to defy any attempt to actually get them fighting fit again.

The *Shaw* was the subject of the spectacular photograph of her explosion. Her entire bow section was blown completely off, and the floating dry dock which she was in sank like a stone. However, a temporary bow was installed on January 26, 1942, when she subsequently entered dry dock. The Navy Yard scrapped the bridge area and replaced it with a temporary mast and ship control station. She left the dock on February 4 and after a few trials departed for Mare Island on February 9. There she was soon transformed into a first-line destroyer and she won eleven battle stars before the war's end.

The *Cassin* and *Downes* looked in a sorry state but, despite this, their main propulsive machinery was in relatively good condition, as were the hull fittings and machinery throughout. Thousands of fragment holes on both vessels had to be patched up and in some cases whole sections of deck and sides which had been blown out by explosions. *Cassin* was righted on February 5 and then floated and placed in the Navy Yard on February 18. In the meantime *Downes* was floated and removed from dry dock on February 6. Eventually, it was decided that the best thing to do would be to scrap the hulls and keep the machinery and usable fittings and parts of the vessels and send them to Mare Island for possible installation later to new hulls. This was done, and the scrapping of *Downes* was completed in dry dock by August 1942 and of *Cassin* in October. They were then rebuilt under their old names by Mare Island Navy Yard and the new ships were completed in November 1943 and February 1944 respectively. *Cassin* then took part in campaigns in the Marcus Islands, Guam, Tinian, Saipan, Luzon and elsewhere, and the *Downes* won four battle stars fighting in Saipan, Luzon and the Marcus Islands.

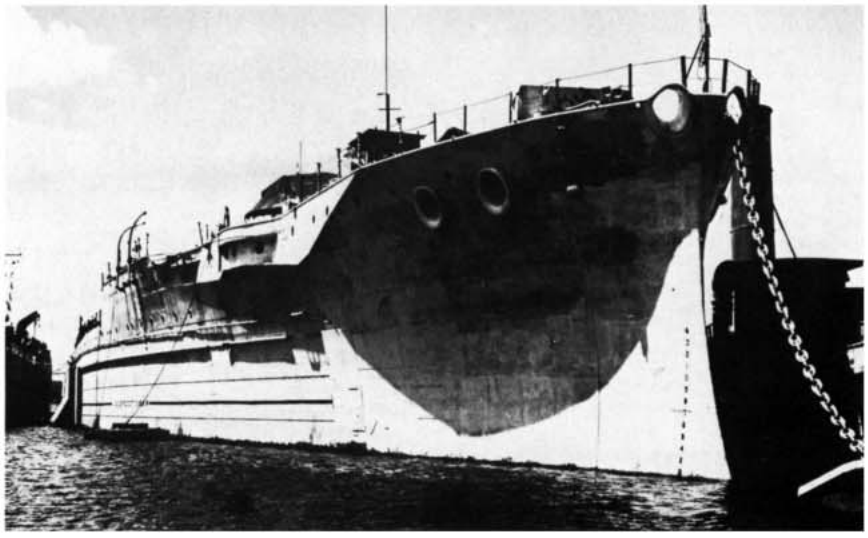
Nevada was viewed by the new C-in-C Pacific Fleet, Admiral Chester Nimitz, where she was run aground, and he for one felt that the chances of her ever being salvaged were very slim indeed. Most of the ship was submerged, and the only visible part was the superstructure which suffered most of the damage. Dredging helped free her from the bottom of the harbour, whilst most of the water that had flooded the compartments below was gradually pumped out. Oil remaining in the vessel's fuel tanks was also transferred to barges. At the same time everything in the ship, documents, valuables and private belongings, were removed and put into safe keeping.

Nevada was floated on February 12, 1942

The Oklahoma was the biggest problem of all having completely turned turtle after suffering upwards of five torpedo hits. However, apart from her possible worth when repaired, she was blocking an important berth so the decision was taken to raise her.

Twenty-one electric winches were anchored in concrete on Ford Island, each with a pull of twenty tons, but a pulley arrangement increased this by seventeen. Forty-foot wooden struts standing on the ship increased the leverage, and an 'air bubble' within the empty fuel tanks accounted for 20,000 tons of her overall weight of 35,000 tons. The pull commenced on March 8, 1943 (National Archives).

Above left: **After rolling the ship sixty-eight degrees to port, the wooden bents were removed and the cables fitted onto lugs welded directly on the hull.** *Above right:* **She was righted by June 16 and entered dry dock on December 28, 1943, whereupon she was stripped of her guns and all useful equipment before being decommissioned in September 1944** *(below)* **(National Archives).**



and entered dry dock six days later. Here her torpedo hole was made temporarily watertight and bomb damage was repaired. The damaged propellor and shaft and the six boilers were put back into operation and new structure and decks were built at various points. Working day and night, the Navy Yard was finished with her by April 22, 1942, and the same day she joined a convoy for the West Coast and sailed to Bremerton, Washington, under her own steam. There she was thoroughly overhauled and modernised. She won for herself seven battle stars, including actions in the Aleutians and the landings in France. Then she took part in the US victory at Iwo Jima, Okinawa and Japan itself. She finished her days rather less gloriously — sunk as a target in 1948.

California did not stop sinking until three days after the attack. Her salvage was much the same as *Nevada*, except the damage was far more severe, and the removal of fifty bodies had to be dealt with first. To make refloating easier, nine of her 14-inch guns were removed, as well as the flag tower, conning tower and main mast. With such measures as these, she came afloat on almost an even keel on March 24, 1942 and was then dry-docked. Structural repairs were made to nearly all her damaged parts and she left on June 7, 1942. After trials, she went to Puget Sound where she was extensively modernised. She later went on to win seven battle stars, and was credited with pounding a Japanese battleship of the Fuso Class with over sixty 1,500lb shells in the Battle of Sungao Strait.

Underwater concrete was used on *West Virginia* to seal her gaping torpedo holes, extending from above the waterline to below the turn of the bilge. In fact the concrete did such a good job that explosives were needed to get it off again when she was in dry dock. Sixty-six bodies were also found on board and in one instance several were found lying on top of steam pipes which were in an air bubble existing in the flooded areas. Three more were found on a lower shelf in a storeroom near a fresh water supply. Next to them was a calendar with every day from December 7 to 23 crossed off. The three sailors had lived in isolation, surrounded by flooded compartments, for seventeen days before finally succumbing, it was assumed, through lack of oxygen. The *West Virginia* came afloat on May 17 and entered dry dock on June 9. Nearly all her electric motors and auxiliary machinery were saved. The Navy worked hard on her and she departed for Puget Sound where she was fitted with a vastly improved anti-aircraft battery, as in fact were all the battleships. She left Puget Sound on July 4, 1944 and took part in the defeat of Japan. She was also at the Battle of Surigao Strait where she poured ninety-three 16-inch shells into the enemy fleet. Finally, she was present on September 2, 1945 when the Japanese surrendered in Tokyo Bay.

The aged *Oglala* — she was launched in 1907 — also posed a formidable salvage problem. She lay on her side, semi-submerged, and her stability during salvage was the worst. Things looked so bad it was thought best at first simply to scuttle her because she was taking up too much space. However, it was decided to attempt to refloat her and then take her to dry dock for repairs. A wooden cofferdam was built round her, and then water was pumped out as divers patched the ruptured shell area and closed the hull openings. The water level was lowered about three feet per hour and on April 23 she came afloat. After that it proved extremely difficult to keep her afloat. All excess weight was removed where possible to stop her sinking again, but she did all the same and the whole process had to be repeated. Then a fire broke out on July 2 and it took half-an-hour to put it out. She went into dry dock the following day, and after repairs she sailed to Mare Island where she was refitted as a repair ship.

The *Oklahoma* needed the most complicated salvage job of all. She had rolled completely over, and the first thing that had to be done was to right the ship. Weighing 35,000 tons, this was no easy proposition, but work to do so started on March 8, 1943. First, twenty-one shore winches were built on Ford Island, anchored in concrete foundations and intended to be operated in unison. Thick strong cable was run through these winches onto the ship via forty-foot-high wooden struts. Then the cable divided into four cat-tails which were secured to lugs welded to the shell of the ship at frame stations. To help the winches and lighten the ship, all her remaining oil, about 350,000 gallons, was pumped off. In addition, an air bubble, divided into five parts to prevent loss of pressure, was pumped into the ship. This forced the water level down to about twenty-five feet below the surface and considerably lightened the ship's weight. Other measures included removal of guns, ammunition and machinery. It was hoped the ship would roll and not slide, and to help ensure this, 2,200 tons of coral soil were laid under the bow. Every cable had to work in perfect unison and gauges were used to make sure they did. Miraculously, it must have seemed, the whole intricate and complicated process succeeded and she was finally sitting the right way up by June 16, 1943.

She was then patched up and a wooden cofferdam constructed, whilst drains and sanitary outlets were closed, as were watertight doors and hatches. As the water was gradually pumped out, more exposed holes were patched, and she finally came afloat on November 3, 1943. She still listed, but it was a far cry from being capsized. She was then dry-docked on December 28, 1943, where permanent repairs could be made. Ironically, though, all this hard work came to nothing. She was stripped of guns and some of her auxiliary equipment, unloaded of the rest of her ammunition and stores, and decommissioned on September 1, 1944.

She was sold for scrap on December 5, 1946 for £46,000 to the Moore Dry Dock, but was lost in a storm at sea about 500 miles north-east of Hawaii on May 17, 1947. An inauspicious end indeed for a ship which had been through so much and so ingeniously brought back from the dead.

Of the Japanese ships involved in the attack, the *Kaga, Soryu, Hiryu* and *Akagi* were sunk in the Battle of Midway in June; the *Shokaku* was torpedoed in the Battle of the Philippine Sea, and the *Zuikaku* was destroyed by carrier aircraft in the Battle of Leyte. Both *Hiei* and *Kirishima* were sunk at Guadalcanal; all the destroyers were either sunk by submarines or naval aircraft and another by mines. *Chikuma* and *Abukuma* were sunk at Leyte Gulf, and the heavy cruiser *Tone* was sunk at her moorings at Kure naval base three weeks before the end of the war. All but one of the tankers were lost by the end of the war, and so were all the submarines.

By an ironic twist of fate, nearly all the victims survived to live again, and all the attackers ended their days at the bottom of the very ocean from which they had hoped to banish them.

AT 0756, 7 DECEMBER 1941
AT BERTH FOX 5
THE USS MARYLAND
MOORED INBOARD THE USS OKLAHOMA,
WAS STRUCK BY TWO ENEMY BOMBS,
CAUSING FLOODING. THE OKLAHOMA
WAS HIT BY FOUR AERIAL TORPEDOES
AND CAPSIZED AND SANK AT 0810.

Plaque recording the demise of the Maryland and Oklahoma on Ford Island.

THE USS UTAH

The *Utah*, like the *Oklahoma*, was capsized, but unlike the latter had no military value to make its salvage worthwhile. It was a far older ship, launched in 1909, and at the time of the attack had already been relegated as a target ship — only a few steps from scrapping anyway. She did not even occupy a berth essential to the fleet. It was thought that the best that could be done was to refloat her for scrapping, but even that was considered not even worth the effort. Anything of value was removed from the ship, such as anti-aircraft guns, ammunition and small arms, much of the fuel oil was pumped out, and she was left in situ to rot.

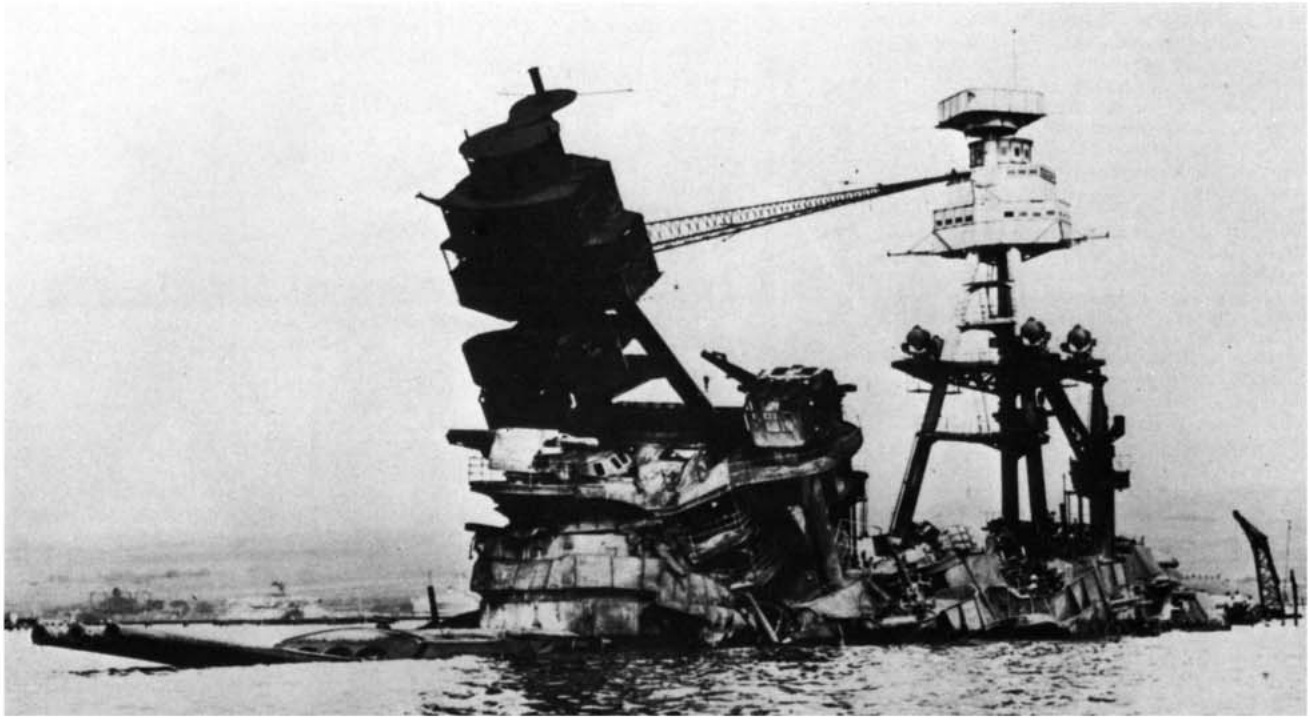
The Navy Department left her there until 1956 when the C-in-C 14th Naval District made it known that carriers of the Essex Class had insufficient space in which to transfer ammunition, special weapons, and guided-missile components. Moving the *Utah* would make such transfers possible. The cost of salvage, it was estimated, would be $4 million, although the 7,000 tons of recovered steel would bring only $30 to $40 per ton. However, as its salvage would make room for the new carriers and remove an obstruction from the channel, this reasoning brought plans for its salvage back to life. To make it a more worthwhile exercise, it was decided to use the refloating of *Utah* as a training exercise for harbour clearance. The ship had already been partly righted and the list to port had been reduced to about thirty-eight degrees but she still sat in water which nearly covered her hull.

Then the Bureau of Ships scuttled the idea by saying that the material requested for righting the ship had been sold and there were no divers available. They also said funds were no longer at their disposal for the two-and-a-half-year job. However, it was stated that there was no objection to using the ship to train divers.

Thus the whole plan was shelved, but the real reason for it was more than likely a moral one. The *Utah* was the grave of fifty-eight men and it was felt that this tomb should not be disturbed. Instead of doing away with her, a small plaque was attached to the wreck to commemorate the action in which she played a part, this was later augmented by a far more grandiose memorial built on Ford Island facing the wreck. Utah Senator Frank E. Moss was the guest speaker at a dedication ceremony held on May 12,1972.

And there she still lies today, red with rust, the harbour waters lapping up against her, at a slightly different angle than the bottom-up position she originally had. She is a very impressive and eerie sight, and provides a very telling spectacle to the visitor, especially when one realises how many men still lie there entombed. It is possible to see the *Utah* wreck from the vantage point of a cruise boat, many of which take tours round the harbour today to see the sights of that momentous day so many years ago, but to see the memorial itself from the shore one must be accompanied by a member of the armed forces as Ford Island is still an active base.

Memorial (costing $141,000) to the Utah on the west side of Ford Island at Berth F11.



THE USS ARIZONA

At first the *Arizona* was scheduled for salvage along with the other damaged ships but, once the full extent of her crippling condition was taken in, such plans were soon discarded as her military value was negligible, although at one time it was thought that the after part of the ship, which was reasonably intact, could be raised if the underwater cutters could satisfactorily disconnect this portion from the rest of the ship. Her remaining above-water superstructure was also cut away to lighten the wreck in preparation for salvage, and a great deal of anti-aircraft guns and ammunition were removed, as well as a lot of ordnance — even as late as 1942. In addition, the oil which fouled the harbour was gradually taken off as it was freed from the ship's open tanks.

Efforts were made to extricate the dead — but only seventy-five of the 1,177 men on board could be removed. The problems involved in getting the rest out were too great to make the project worthwhile, and 1,102 are left entombed in the sunken battleship to this day. The guns — 14-inchers — were removed and offered to the Army, and eventually all projections were cut off the ship leaving very little visible above water level.

Once the question of whether the *Arizona* could ever be salvaged was answered, the vessel's fate hung in the balance for quite some time to come. By the time the war ended, all the wreckage in Pearl Harbor had been cleared away, the last reminders of the attack being the *Utah* and *Arizona*. As new warships joined the fleet, however, they began the unofficial practice of rendering honours — saluting the wreck — just as pre-war ships had done when she was in service and flying her colours. Finally, on March 7, 1950, the C-in-C Pacific Fleet, Admiral Redford, made it official: 'From today on the USS *Arizona* will again fly our country's flag . . . and from that day on the Stars and Stripes have flown above the wreck.

In the same year, a temporary memorial was built above the ship's main deck-house, but by 1956 it was no longer considered sound and the daily ceremony of colours on board ship was thought unsafe with the ever-present threat of it collapsing underneath the men as they conducted it. It was then that the C-in-C 14th Naval District asked the Pacific War Memorial Commission to sponsor a public campaign to obtain a memorial worthy of the ship. Hawaii's delegate to Congress, the Hon. James A. Burns, introduced legislation which the 85th Congress approved on March 15, 1958, authorising construction of a memorial at Pearl Harbor.

Then there arose the question of money. Funds were raised in various ways. A Bill appropriating $150,000 was passed by the 87th Congress and signed by President Kennedy in 1961. Under sponsorship of the Pacific War Memorial Commission the remaining funds were raised. $100,000 came from the State of Hawaii, and the balance of $250,000 came from public contributions with assistance from a Ralph Richards' 'This Is Your Life' show and an Elvis Presley show, both of which were produced in Hawaii. The AMVETS contributed the Carillon, and paid for the Italian marble in the shrine. The architect of the memorial, Alfred Pries, interned as an alien on America's entry into the war, was responsible for the structure which stands there today.

Total cost of the memorial was $532,000 and the completed structure is in the shape of an enclosed bridge 184 feet long which is thirty-six feet wide and twenty feet high at the ends, tapering to twenty-seven feet wide and fourteen feet high at the centre. It is supported by two 250-ton concrete girders which rest on thirty-six pre-stressed pilings driven into the harbour bottom. No part of the memorial touches the ship itself, as much through the instability of the wreck as for any other reason, and the memorial was purposely positioned where it lies now in order to permit the flag to be attached to part of the actual structure of the ship.

Within the memorial there are three sections: the museum room, containing mementos of the *Arizona*; the assembly room, which can hold two hundred people for ceremonies and from which visitors can view

Members of a Special Board of Review inspect the midship section of the Arizona on March 19, 1948 to decide if she should be raised to recover the remains of her crewmen (US Army).

the ship — and the shrine room where on a wall are inscribed the names of all 1,177 men who died on board the ship. The oldest relic is the ship's bell, placed on her before she was commissioned on October 17, 1916.

Thousands visit the USS Arizona Memorial every year — attracted perhaps by its strange history, and perhaps disappointed by the fact that so little is visible today. But then it is first and foremost a grave and not, despite its popularity, a tourist attraction. The men who survived the attack would be the first to agree. They return in ever decreasing numbers year after year to pay homage to the men who died that day and, as the memorial confirms, ensure that

'. . . shall ne'er go by,
From this day to the ending of the world,
But we in it shall be remembered, —
We few, we happy few, we band of brothers;
For he that today sheds his blood for me
Shall be my brother . . . '

As well as the memorial over the ship, there is a fine visitors' centre in which those going to see the wreck are at first received by the friendly and helpful men and women of the National Park Service who run the complex. The idea of the centre was finally approved by the Senate in July 1978 after a lot of wrangling, but has since proved an enormous success.

Work started after a ground-breaking ceremony on October 19, 1978 attended by various notables. More ceremonies were held on December 7, 1979, when a cake representing a cheque for $456,484.25 was presented to the fund raisers. It was the final instalment of nearly $1 million in donations raised by the Arizona Memorial Museum Foundation. Individual donations raised by the foundation came to more than $500,000.

The centre is designed to accommodate 3,000 visitors per day, and they come in droves often exceeding that number. It sits in landscaped grounds with an interior courtyard with central fountains and rest rooms, a bookshop and snack bar, with many relics from the ship and its history housed in a museum. The visitor is greeted and given a ticket which entitles him free of charge to see a film giving the background to the attack and the ship itself. This is a very interesting film indeed, from which the visitor can see for himself exactly what the episode was about and then put the events and the *Arizona* in

Above: **The original memorial was actually fixed to the Arizona's superstructure.** *Below:* **Today the 184ft-long memorial bridge spans the wreck and, although little now remains to be seen of the ship, iridescence from escaping oil colours the surface (US Navy).**

context. Once he has seen the film, the visitor goes on one of the Navy shuttle boats and spends as much time as he likes on the memorial itself. There is no need to be bored — any waiting time can be spent in the visitors' centre looking round it if waiting to ride to the memorial, or if waiting to return, on the ship looking at the collections of plaques and antiquaries.

Certainly no trip to Hawaii should be made without including the memorial, and it is fascinating to look into the past in a place where everything is moving forward so quickly.

Believe it or not, the USS *Arizona* can also be found at two other locations on Oahu. One of these is Waipio Peninsula, at the Navy degaussing station, which was used as a storage site for the superstructure remains of the ship.

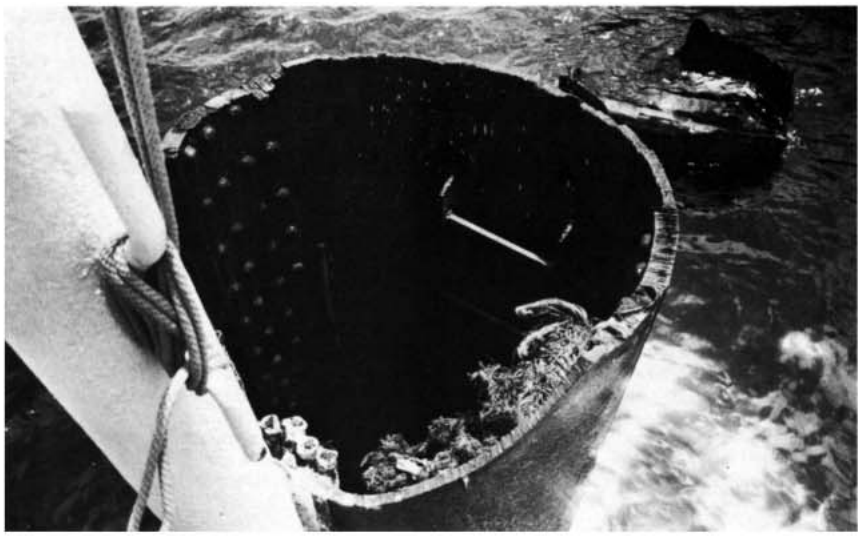
Shortly after she was destroyed, sections of her superstructure were salvaged and hauled to this site on the tip of Waipio where it has remained practically forgotten to rot away, piece by piece, year by year. The Hawaiian Army Museum wanted to use it for a fund raising campaign but this was not permitted in view of the ship's status as a war grave. It seemed a waste to let it rot, but the cost of doing anything else with it was far too high. Someone suggested that the superstructure could be reunited with the rest of the vessel, but even this has come to nothing. Many museums, when hearing of its existence, have asked for a piece to use as an exhibit but there is no evidence to suggest that any have been successful in their requests.

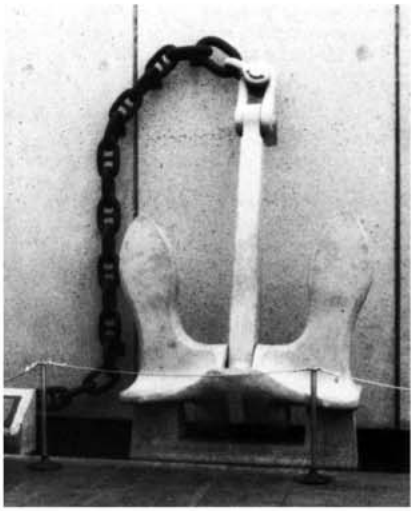
Then, in January 1978, the Navy decided to assume responsibility for reclaiming three separate items which were lying around — a hatch and cover, a section of armoured pipe, and a platform and ladder assembly. It was thought they might form part of an exhibit to display in a planned museum.

The ship's scout plane lies in another area and is in an equally sorry state; the longer these relics of the ship lie there, the worse their condition will become.

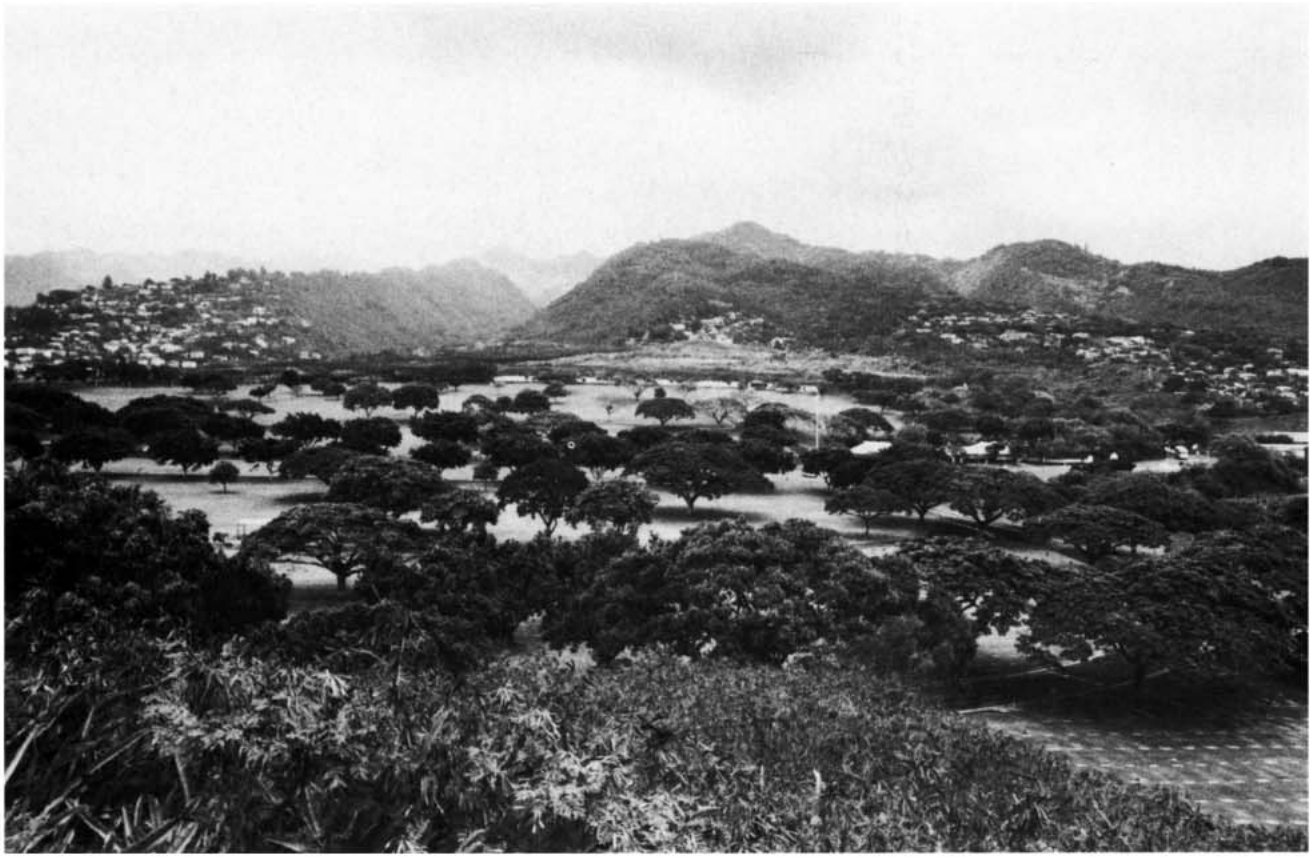
More of the *Arizona* can be found at Kaneohe Marine Corps Air Station — if you get there at the right time. I eagerly wanted to see the 14-inch gun emplacements, which house the battleship's main armoury, but when I went to Kaneohe a firing practice was going full blast and I was unable to get permission to enter. Anyway, when the ship was stripped of anything useful, the big guns were removed with the idea of using them as coastal defence batteries in the event of an invasion. Designated logically enough Batteries Pennsylvania and Arizona, sites for the guns were chosen at the tip of Mokapu Peninsula. The sites were prepared and a very intricate, self-contained emplacement was built for both. However, their construction took so long that by the time everything was ready the war was all but over. A few years afterwards, when the US decided to discontinue fixed coastal defences, the batteries were cut up for scrap. All that now remains is the maze of rooms within Ulupau and the housing for the 14-inch gun.

Above: **No. 4 Turret.** *Below:* **The new affixed to the old. The original flag was rescued from the Arizona on the evening of December 7 by Lieutenant Kleber Masterson and Ensign Jim Dare, although it is believed it was later destroyed.**





Artifacts on display above water at the Arizona memorial and visitors' centre.



The extinct Punchbowl Crater is the beautiful setting for the National Memorial Cemetery of the Pacific where lie the remains of more than 21,000 Americans who died in the First and Second World Wars, in Korea and in Vietnam. Eight Gardens of the Missing record the names of 18,093 missing of World War II and 8,194 of the Korean war. Two additional courts were added in 1978 to honour the 2,489 missing in the Vietnam war. Here also lies Ernie Pyle, famous war journalist, killed on April 18, 1945.

PEARL HARBOR TODAY

Unlike many of the locations of other wartime engagements, rather than become less important after the war, Oahu has become even more so. Pearl Harbor is every bit as vital today as it was in 1941 and during the war years. It is a $1.5 billion complex of buildings and one of the US Navy's largest bases and home port for forty ships including submarines. Navy-owned land around Pearl totals 7,664 acres with a water acreage of 4,980. More than 23,500 sailors are on active duty here, ashore and afloat, with 12,000 stationed on ships and 11,500 in shore billets. The Navy currently employs 13,900 civilians of whom 6,400 work in the shipyard (36,000 worked there at the height of the war). Thus the Navy makes an annual contribution to the Hawaiian economy of $800 million, via payroll, contracting services, and purchases by the Navy in Hawaii. The shipyard helps maintain the 265 ships of the Pacific Fleet, and from the HQ complex at Pearl, the Pacific Fleet command area stretches out to cover ninety-four million square miles, from the west coast of North America to the Indian Ocean, and from the Arctic to the Antarctic — nearly half the surface of the earth.

Continuing a fight that began long before the attack on Pearl Harbor, Hawaii battled tooth and nail for acceptance as a fully-fledged American state and finally won on August 21, 1959, when President Eisenhower signed a proclamation declaring Hawaii to be the 50th state. From then on Hawaii, but most of all Oahu, and Honolulu in particular, has expanded enormously. Bursting through its earlier confines, Waikiki has sprung up as a new jungle — that of huge soaring tower blocks with its suburbs seeking the quieter confines of the slopes of the Koolaus. Once the reserve of Hawaiian royalty, Waikiki is now the home of thousands of tourists every year — spending hundreds of millions of dollars to swell the coffers of this truly unique American state. The population of Honolulu is today something in the region of 715,000, the vast majority of them geared towards satisfying the needs of her visitors.

Because Honolulu is so important — the seat of state government, the location of the still-active military establishments, her important courts, schools, hospitals, banks — in fact everything that goes to make up Western society, practically everyone lives there. The remainder of Hawaii's million population live on the other quieter islands but, for Oahu, constant growth and unremitting development is the order of the day. Huge highways connect every part of the island, all starting and finishing in Honolulu, where 'spaghetti junctions' dominate.

Oahu contains everything in fact except two things: any true survivors of her first inhabitants, and any really easily recognizable relics from the attack. One reason for this is that every base attacked is still occupied and run by the military which makes visiting them extremely difficult unless you make arrangements long beforehand. Even then there are more complications. Pearl Harbor Naval Shipyard was playing host to several nuclear submarines when I visited, and I was unable to either take photos in their direction or go near to them. After having travelled some 10,000 miles to get there this was a very frustrating exercise. However, John Fairbank of that office kindly made available to me other photos which tied in quite well and some matches were possible in this way. Apart from the Arizona and the Utah Memorial (the latter cannot be visited without permission) there is really nothing else left and as one cannot wander round Pearl Harbor at will, it is also very hard to search anything else out.

It is the same story at the other military establishments. Wheeler has no really exciting examples of damage or signs of the attack, neither does Bellows except for one or two plaques. Kaneohe of course has the Arizona gun emplacements but I was unable to see them anyway because of their location in a firing range. Schofield is the best bet, casual

'The solemn pride that must be yours to have laid so costly a sacrifice upon the altar of freedom.' Abraham Lincoln's words to the mother of five sons killed in the American Civil War, now inscribed beneath Columbia in the Court of Honor.

An empty casemate of Battery Pennsylvania, built to house the Arizona's 14-inch guns.

visitors are allowed I believe, and, if nothing else, a wander round the original quads gives some idea of the place on the day of the attack as it has hardly changed at all. The library bears some bullet marks, and Kolekole Pass can be seen from the grounds. The barracks is still the home of the 25th Infantry Division where it continues to undergo intensive training designed to enable a swift response to any call to action. Hickam of course has the bullet-scarred PACAF building, the original hangers, and one or two relics like the original flag which flew on the day of the attack. Even here though, the demands of today have no room for the memories of yesterday. Even some of the flight line has been turned into a housing estate. Hickam is operated today by the 15th Air Base Wing which is responsible for supporting HQ PACAF and all units assigned, attached or simply passing through Hickam, including military airlift command units. The 15th ABW supported the Vietnam homecoming 'Babylift' and 'Newlife' operations in the early 1970s; the lunar astronauts in the 1960s and 1970s; the Eniwetok Atoll clean-up in the middle of the 1970s, and is now preparing to support the NASA Space Shuttle in the 1980s.

In 1948, Wheeler was transferred to the Army after a short spell in the USAF and was redesignated Wheeler Air Force Base. In 1949 it was placed on 'minimum caretaker status' but in the 1950s was reactivated and occupied by a number of Department of Defense organisations. Today it employs about a 1,000 Air Force and civilian personnel, plus 1,600 Army people. The Army conducts helicopter training from Wheeler, and the base also houses the aircraft of the Hickam-Wheeler aero-club. Twenty-one other units also operate from the base.

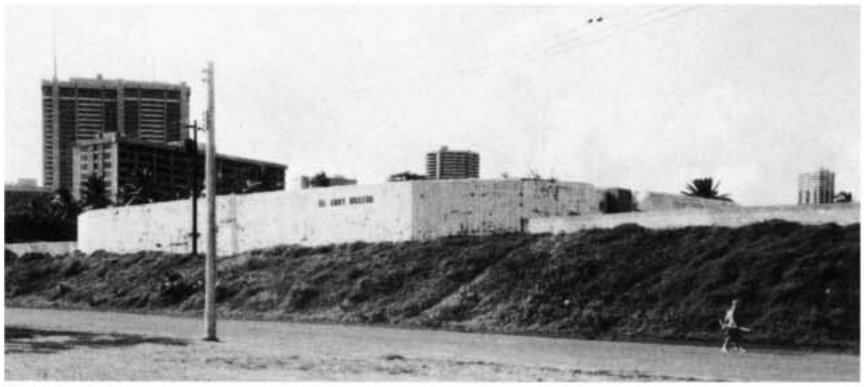
Bellows Air Force Station today serves as the 'antenna farm' for a global transmitting complex, a recreation area for all services, and a training area for US Marine amphibious services. Flying activities were terminated in 1958 and its strategic importance has steadily declined since then, its anti-aircraft missile site being closed down in 1970.

Kaneohe Naval Air Station was transferred to the Marine Corps in 1952, and today houses the 1st Marine Brigade and is home for more than 11,000 Marines and sailors. It is the only unit in the corps where air and ground units both live and train as a single, cohesive unit. Its aircraft include the F-4 Phantom, the A-4 Skyhawk and the CH-53 Sea Stallion and CH-46 Sea Knight helicopters.

It is a pity that so little remains to remind people of one of the most successful surprise attacks in history but then the form of the attack, and the targets themselves, were such that one might ask what one should expect to see. Pearl Harbor of course has in the USS Arizona Memorial perhaps the most stunning relic of all — an entire battleship — but as there was no actual fighting on the ground, Oahu does not have the sort of relics found in Corregidor, Tarawa, Okinawa, and the score of other Pacific battlefields. For what I did find, though, I have many people to thank, and I would like to take this opportunity of doing so.

Dennis Fujii, Chief of Community Relations at Hickam, was kind enough to show me all round the airfield and help match difficult shots, both there and at Bellows and Wheeler. He was aided in his patient endeavours by Captain Staal and Sergeant Wilberforde. Lieutenant Commander Mcgrath also gave me assistance in the early stages, and I must also thank John Isenberg of the Naval Air Station Photo Lab at Barber's Point for helping match wartime aerial shots with those they have taken recently. My grateful thanks also to John Martini of the Arizona Memorial as well as all his colleagues there. Richard Rothrock of the Pearl Harbor Public Relations Department gave me much appreciated assistance and Thomas Fairfull of Fort DeRussy Army Museum allowed me to take photographs of fragments of Japanese planes. Sergeant Stoner of Kaneohe Marine Corps Air Station also helped me during my visit to that location, driving me round the base searching out the places where the wartime photos were taken.

To all these people I would like to say 'Mahalo', and the same to anyone else I have forgotten to mention but who has also shown me the true spirit of 'Aloha' during my most enjoyable and unforgettable stay.



Fort DeRussy at Waikiki Beach was one of Oahu's first beach defences opened in 1911 as Battery Randolph mounting 14-inch guns. Today it houses the US Army museum and one display case exhibits the pitifully few fragments which have survived from the twenty-nine attacking aircraft shot down. The Japanese admitted after the war to losing nine aircraft in the first wave and twenty in the second.

UNKNOWN
DECEMBER 7 1941